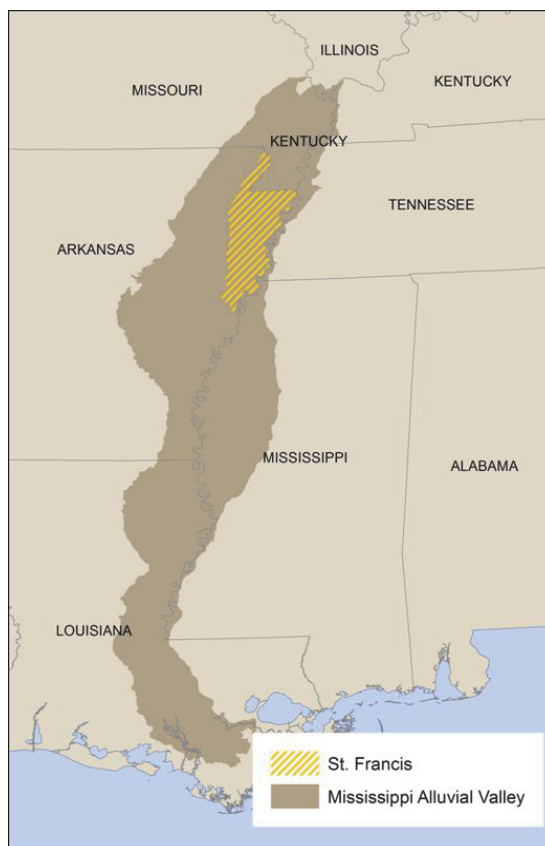Environmental Laboratory

US Army Corps of Engineers®
Engineer Research and
Development Center

Ecosystem Management and Restoration Research Program

Potential Natural Vegetation of the Mississippi Alluvial Valley: St. Francis Basin, Arkansas, Field Atlas

Charles Klimas, Thomas Foti, Jody Pagan, and Malcolm Williamson

September 2012
(Revised July 2013)

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St. Francis Basin, Arkansas, Field Atlas

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Final report

Abstract

Over the past three decades, extensive field studies of wetland plant communities have been conducted in the Mississippi Alluvial Valley. These field studies have been carried out for various purposes under the auspices of federal and state research programs or in conjunction with Corps of Engineers project planning efforts. In the process, a wetland site classification approach has evolved based on hydrology, soils, and geomorphic setting. The research data and classification system have been recently used for a new purpose: to create a set of Potential Natural Vegetation (PNV) maps covering more than 26,000 square miles within the region. The purpose of PNV maps is to serve as blueprints for restoration planning and prioritization. Due to the fact that the hydrology of the landscape has been permanently changed by major flood control projects, the PNV maps do not represent the distribution of the original, pre-settlement vegetation. Rather, they identify the natural communities that are appropriate to the modern altered site conditions. By using these maps, persons interested in restoring particular tracts of land can identify the plant communities appropriate to the conditions present. Conversely, individuals interested in restoring particular plant communities can identify parts of the landscape that can support each respective type. The PNV maps are available for use in a Geographic Information System, where a range of complex restoration scenarios (such as the development of wildlife travel corridors or refuge areas) can be explored efficiently, and alternative approaches can be compared to one another in terms of costs and ecological effectiveness. This report is one of six Field Atlases that present the same data in a down-loadable, printable format at a scale of 1 in. = 1 mile.

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Preface

The Mississippi Alluvial Valley (MAV) once contained the most extensive and diverse lowland forest in North America. The complexity and productivity of the ecosystem were the result of the dynamic behavior of the large rivers that have repeatedly migrated across the landscape, eroding and depositing sediments and periodically flooding millions of acres. Since the arrival of the first European settlers in the 19th century, the rivers have been stabilized and prevented from inundating most of the former floodplain, and agriculture has largely replaced the native vegetation. The deforestation of the MAV has been recognized for more than half a century as contributing to a variety of problems such as the extinction of wildlife species and pollution of receiving waters, including the Gulf of Mexico. Various government policies and private initiatives have been implemented to reverse this damage through restoration of native plant communities.

Ecologists working to restore natural systems in the MAV have sought to understand the fundamental changes that have occurred, particularly with regard to hydrology, and evaluate the effects of these changes on ecosystem function and restorability. The state of Arkansas, with funding from the U.S. Environmental Protection Agency (EPA), initiated much of the research in this area as part of a program to develop guidebooks for hydro-geomorphic (HGM) classification and assessment of wetlands. Various Corps of Engineers offices also participated in HGM-related studies as part of impact and alternatives analyses conducted for proposed federal flood control and water development projects in the MAV. The field data and spatial information developed for some of the projects in Arkansas provided the basis for the initial Potential Natural Vegetation (PNV) maps that were intended to be used to guide restoration planning over large areas. Since then, PNV maps have been developed for all of the MAV in eastern Arkansas, northwestern Mississippi, and northeastern Louisiana, with funding from diverse sources, including Corps of Engineers District offices, EPA, the state of Arkansas, and the U.S. Fish and Wildlife Service.

PNV maps were originally intended to be used in a geographic information system (GIS), where numerous possible options for restoration design can be explored and evaluated. However, as part of their PNV efforts, the Fish

and Wildlife Service also produced the first two Field Atlases– for Louisiana and Mississippi–and made the PNV maps available as downloadable products intended to be printed and bound for field use (http://www.lmvjv.org/bookshelf.htm). This format proved popular, so a set of four additional atlases covering the Arkansas portion of the MAV has been developed, with this current atlas being one of them. All four of these documents are available for download, and the current atlas is available at: http://el.erdc.usace.army.mil/emrrp/analyt.html. The current version (June 2013) of the St. Francis Basin Atlas corrects errors that were present in the original atlas and GIS files, which should be discarded.

Charles Klimas, U.S. Army Engineer Research and Development Center (ERDC), Thomas Foti (Arkansas Natural Heritage Commission and Oakleaf Institute, Little Rock, Arkansas) and Jody Pagan (5-Oaks Wildlife Services, LLC, Stuttgart, Arkansas) developed the PNV concept and approach and have been the core mapping team across all of the basins. The original PNV maps upon which this atlas is based were developed for the Arkansas Multi-Agency Wetland Planning Team (MAWPT) with a Wetlands Program Development Grant from Region 6 of the U.S. Environmental Protection Agency. Malcolm Williamson (Center for Advanced Spatial Technologies, University of Arkansas, Fayetteville) assembled and processed the original project GIS data and subsequently updated and normalized that data and prepared the maps that are included in this atlas.

While various sponsors participated in the development of the original maps, as described above, this series of Arkansas PNV Atlases was prepared and published under the Ecosystem Management and Restoration Research Program (EMRRP), within the Environmental Laboratory, ERDC, Vicksburg, Mississippi. Glenn Rhett is EMRRP Program Manager. Dr. Al Cofrancesco is the ERDC Technical Director for the EMRRP.

COL Kevin J. Wilson is the Commander of ERDC, and Dr. Jeffery P. Holland is the Director.

Unit Conversion Factors

Multiply	By	To Obtain
acres	4,046.873	square meters
inches	0.0254	meters
miles (U.S. statute)	1,609.347	meters
square miles	2.589998 E+06	square meters

1   Introduction

Studies of wetland plant communities in the Mississippi Alluvial Valley (MAV) over the past decade have produced a site classification approach based on hydrology and geomorphic setting. The approach is consistent with the "hydrogeomorphic" or HGM wetland classification system, but it has been adapted and refined specifically to support the development of detailed maps of the Potential Natural Vegetation (PNV) of the region. PNV maps serve as a template for restoration planning and prioritization in a landscape that has been highly modified. Most of the bottomland hardwood forests and other native plant communities of the MAV were converted to agriculture during the 20th century. The remnants are largely those forest types that are adapted to the wettest sites where row cropping was infeasible. At the same time, tremendous local and federal effort has been expended on drainage, flood control, and navigation projects that have permanently altered the hydrology of the floodplain and alluvial terraces in the region. Consequently, the PNV maps are not designed to represent the distribution of the original, pre-settlement vegetation; rather, they identify the natural communities that are appropriate to the altered site conditions, hence the "potential" designation. This means that persons interested in restoring particular tracts of land can identify the plant communities appropriate to the various site conditions present. Conversely, individuals interested in restoring particular plant communities can identify parts of the landscape that could support each respective type. This information is available in GIS format, so various restoration scenarios can be explored and compared in terms of relative costs and ecological effectiveness.

This atlas covers the St. Francis Basin of northeastern Arkansas. It has been created as a field reference for professionals who plan and conduct restoration projects in that area. The maps in this atlas (Appendix A) are produced at a scale of approximately 1:63,360 (1 in. = 1 mile). As an aid to orientation in the field, each PNV map is accompanied by the corresponding aerial image on the facing page, and both pages display major roads and towns. The pages immediately preceding the maps include master indexes to the map pages, using two different basemaps to provide an overview of the mapped PNV types as well as roads and towns for orientation. Also preceding the map section is a map key that lists all of the PNV vegetation

community types present in the basin as well as the community classification code, typical site conditions, and common dominant species for each type. Appendix B follows with details on the characteristics of each community type; these details provide guidance regarding natural topographic features and plant species appropriate for restoration. The PNV approach, mapping criteria, and typical applications are described in more detail in a separate publication (Klimas et al. 2009).

2 The St. Francis Basin

The St. Francis Basin lies in northeastern Arkansas and southeastern Missouri. This atlas includes only the Arkansas portion of the basin (Figure 1). The eastern boundary is defined by the mainstem Mississippi River levee, and the western boundary is Crowley's Ridge. More than 2 million acres are included in the mapped area. The principal streams are the St. Francis, Tyronza, and Little Rivers.
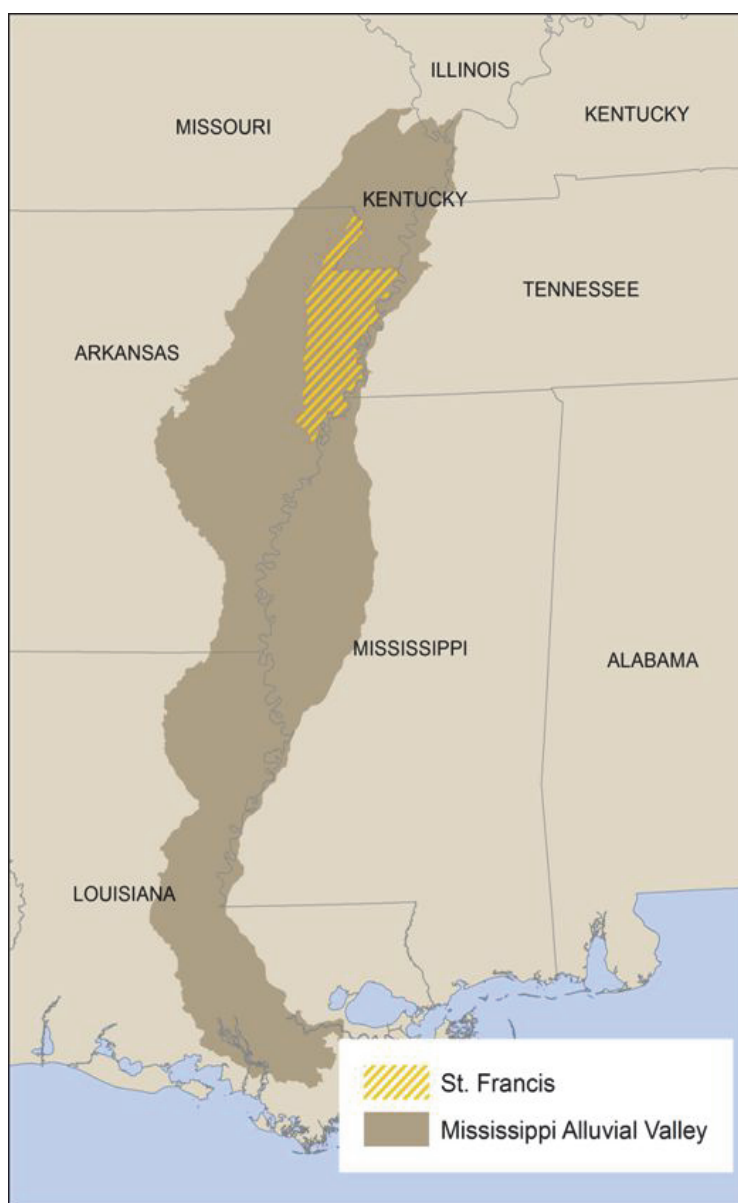
Figure 1. Location of the St. Francis Basin in Arkansas.

Within Arkansas, approximately half of the St. Francis Basin is made up of recent (Holocene) meander belt deposits of the Mississippi River and smaller streams. These include poorly-drained backswamps, better-drained point bars, and well-drained natural levees. Abandoned channel segments form crescent-shaped oxbow lakes and depressions. The remainder of the area is composed of glacial outwash that flushed into the Mississippi Valley during periods of waning Late Wisconsin continental glaciation. Sometimes called "valley train" deposits, they are composed of relatively unsorted, coarse materials deposited in a braided-stream environment, and are very different from the later fine-grained, well-sorted deposits of the modern meandering streams. In the St. Francis Basin within Arkansas, they occur as several distinct terraces. The oldest and highest levels are two narrow terraces adjacent to Crowley's Ridge; the more recent deposits are much more extensive and often lie at approximately the same elevations as the adjacent Holocene meander belts. On the lower and younger terraces, the remnant outwash channels are often distinctly visible, and may carry smaller modern streams within them. Relict sand bars and wind-blown sand are apparent on the surface of some valley train deposits. In the St. Francis Basin, there also are numerous more recent deposits known as "sand blows," consisting of buried outwash sands ejected during the New Madrid earthquakes of 1811 and 1812.

This complex landscape of old and young deposits of various origins was subject to frequent flooding prior to the early 20th century. Since then, the St. Francis Basin has been the focus of one of the most comprehensive and effective flood-control and drainage efforts in the world. The mainstem Mississippi River levee and an internal system of levees and floodways—mostly federal projects—prevent regular overbank and backwater flooding. A network of drainage ditches constructed by local interests effectively removes most of the remaining excess water—local precipitation that once ponded on the surface, supporting forested wetlands. While some of these smaller ditches might be plugged or filled as part of a wetland restoration, the large federal projects are assumed here to be permanent features on the landscape. Therefore, the PNV community type descriptions (Appendix B) specifically note that some types occur "within floodways," and there is some uncertainty concerning the long-term persistence of the species identified as dominants in those man-made environments.

3 Using the PNV Map as a Model for Restoration

The PNV mapping process was conceived as a way to provide the best available representation of restoration potential for the native plant communities of the MAV. One key aspect of these maps is that they reflect current, rather than historic, hydrologic patterns. This fundamental feature of the classification system—basing community designations on site conditions rather than species composition—also prevents misclassification of sites based on past management practices or other historic influences. The map legend (Appendix A) includes several ways of classifying the community types: by HGM subclass, for use with the corresponding HGM functional assessment guidebook (Klimas et al. 2011); by site characteristics, which can be used to help guide site preparation; and by species dominance type, which lists species that frequently dominate on similar sites throughout the MAV. Note that these dominant species are not the only ones that should be included in a restoration plan for a site, and that sometimes one or more of the listed species are not common on a site type within a specific basin. Restoration planning should be based on the detailed and basin-specific community type descriptions in Appendix B, which reflect the probable long-term dominance patterns under current conditions. On forested sites, these will sometimes include species other than those that presently dominate. Because of these characteristics, there are many possible uses for the PNV maps, including those listed below.

Replacement of critical habitat

The PNV mapping effort in Louisiana was initiated specifically to support restoration of potential habitat for the Ivory-Billed Woodpecker, which was prompted by its recent reported rediscovery in Arkansas. Foti et al. (2011) discuss how PNV mapping can be used to help guide a restoration program of that type in the modern MAV landscape. Where critical habitat for other species is dependent on the composition, structure, and distribution of plant communities, the PNV maps can be used in similar ways to target the most effective sites for habitat restoration and population management.

Site-specific restoration design

Because the PNV maps often recognize mapping units of a fraction of an acre, they can normally inform restoration design even on relatively small or diverse sites. The site characteristics and geomorphic settings described in Appendix B indicate the extent to which a particular community tends to be affiliated with the ridges or swales of point bars, the almost-imperceptible vernal pools in backswamps, and similar subtle variations in topography that may have been moderated or eliminated by agricultural practices. Users should evaluate a particular site in light of these descriptions, and restore the appropriate topography prior to planting the area. If filling a ditch or breaking a levee is part of the restoration plan, the expected change in flood frequency will indicate establishment of a plant community different from the mapped unit, and that new "target" condition can be identified by consulting Appendix B. While all of these features will help guide restoration design, users are encouraged to adjust their site preparation and planting plans as needed based on their local knowledge, experience, and observations of actual conditions in the field. In particular, it is important to recognize that the accuracy of the community boundaries on the PNV map are limited by the precision and resolution of the underlying geomorphic, soils, and hydrology mapping, and that transitions between vegetation communities are normally more gradual than the distinct polygons on such maps imply. Similarly, where the modern hydrology is affected by structures such as roads and aquaculture impoundments, community boundaries may appear as straight lines. The authors have attempted to estimate the approximate true boundary if the structure is one that can be easily removed as part of a restoration project (e.g., a low catfish pond levee), but did not modify linear boundaries where the structure is unlikely to be removed (roads and flood-control levees) or where the topography, geomorphology, and soil data did not indicate a probable community transition location. In such cases the mapped feature appears as a rectangle and users should evaluate such modified sites individually prior to developing restoration specifications.

Landscape-level restoration planning

PNV maps can be useful for identifying restoration needs and opportunities where resource objectives involve the distribution of particular habitats over large regions. For example, in a GIS environment, it is relatively simple to identify sites appropriate for the restoration of extremely rare communities (e.g., prairies); sites that would support the maximum habitat diversity

within a single large block of restored forest; or the forest communities appropriate for restoration within various sections of lengthy riparian corridors. PNV maps directly reflect flood frequency; therefore, restoration projects can be designed to assure that flood refuge areas are included in projects intended to provide habitat for terrestrial wildlife. Because the PNV maps use the HGM classification system, they reflect other wetland characteristics of potential interest. For example, the PNV map distinguishes between sites suitable for establishing Connected Depressions and Unconnected Depressions. Though these sites support the same forest communities, the latter is far more suitable for restoring amphibian populations due to the lack of predatory fish. There are numerous similar types of applications that can add flexibility and insight to the restoration planning process.

Mitigation design

The PNV maps have several obvious regulatory and planning applications. They can be used to find suitable locations for in-kind mitigation of project impacts, or to plan mitigation in a watershed context, as is currently encouraged in various federal programs. However, because the PNV maps use the HGM classification system, they can also be used in conjunction with HGM Regional Guidebooks to help calculate the appropriate amount of compensatory mitigation for particular wetland subclasses under various impact scenarios. The HGM guidebook for the Arkansas Delta Region (Klimas et al. 2011) includes assessment models and recovery trajectories that can be used to estimate the degree to which restored wetlands perform certain functions over time. This means that restoration priorities can be adjusted to offset the loss of particular functions, or to favor restoration scenarios that will most quickly meet particular functional needs.

This atlas and other files and documents related to Potential Natural Vegetation mapping in the Mississippi Alluvial Valley can be downloaded from: http://el.erdc.usace.army.mil/emrrp/analyt.html

References

Foti, T., C. Klimas, J. Pagan, and A. Keister. 2011. *Potential natural vegetation of the Mississippi Alluvial Valley: Tensas Basin, Northeastern Louisiana*. Vicksburg, MS: U.S. Fish and Wildlife Service, Lower Mississippi Valley Joint Venture.

Klimas, C. V., E. O. Murray, T. Foti, J. Pagan, M. Williamson, and H. Langston. 2009. An ecosystem restoration model for the Mississippi Alluvial Valley based on geomorphology, soils, and hydrology. *Wetlands* 29: 430–450.

Klimas, C. V., E. O. Murray, J. Pagan, H. Langston, and T. Foti. 2011. *A regional guidebook for conducting functional assessments of forested wetlands in the Delta Region of Arkansas, Lower Mississippi River Alluvial Valley, Version 2.0*. ERDC/EL TR-11-12. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Appendix A: Field Atlas

POTENTIAL NATURAL VEGETATION OF THE MISSISSIPPI ALLUVIAL VALLEY: ST. FRANCIS BASIN OF ARKANSAS
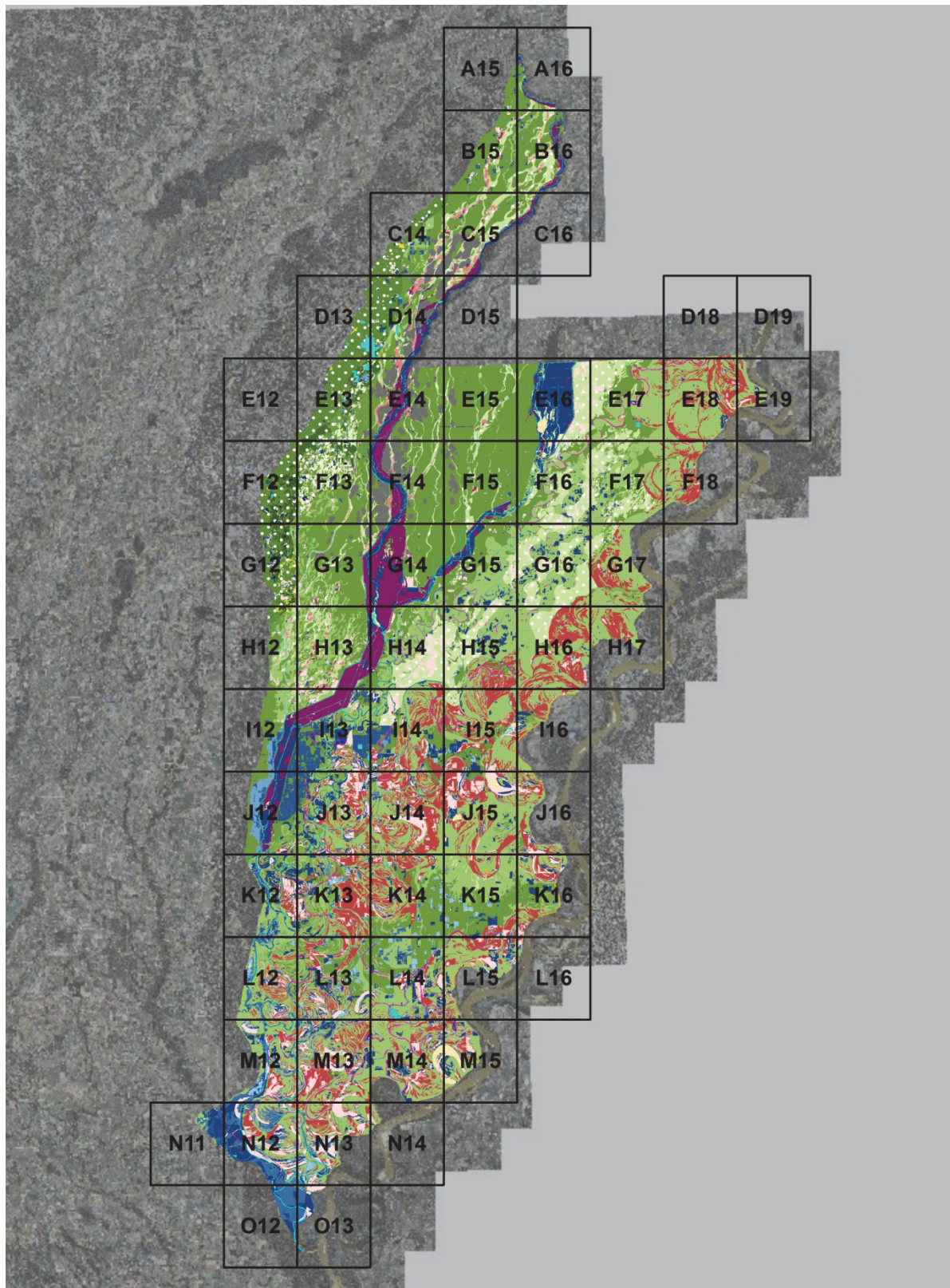
Figure A1. St. Francis Basin Map Index: Cities, Roads, and Public Lands.
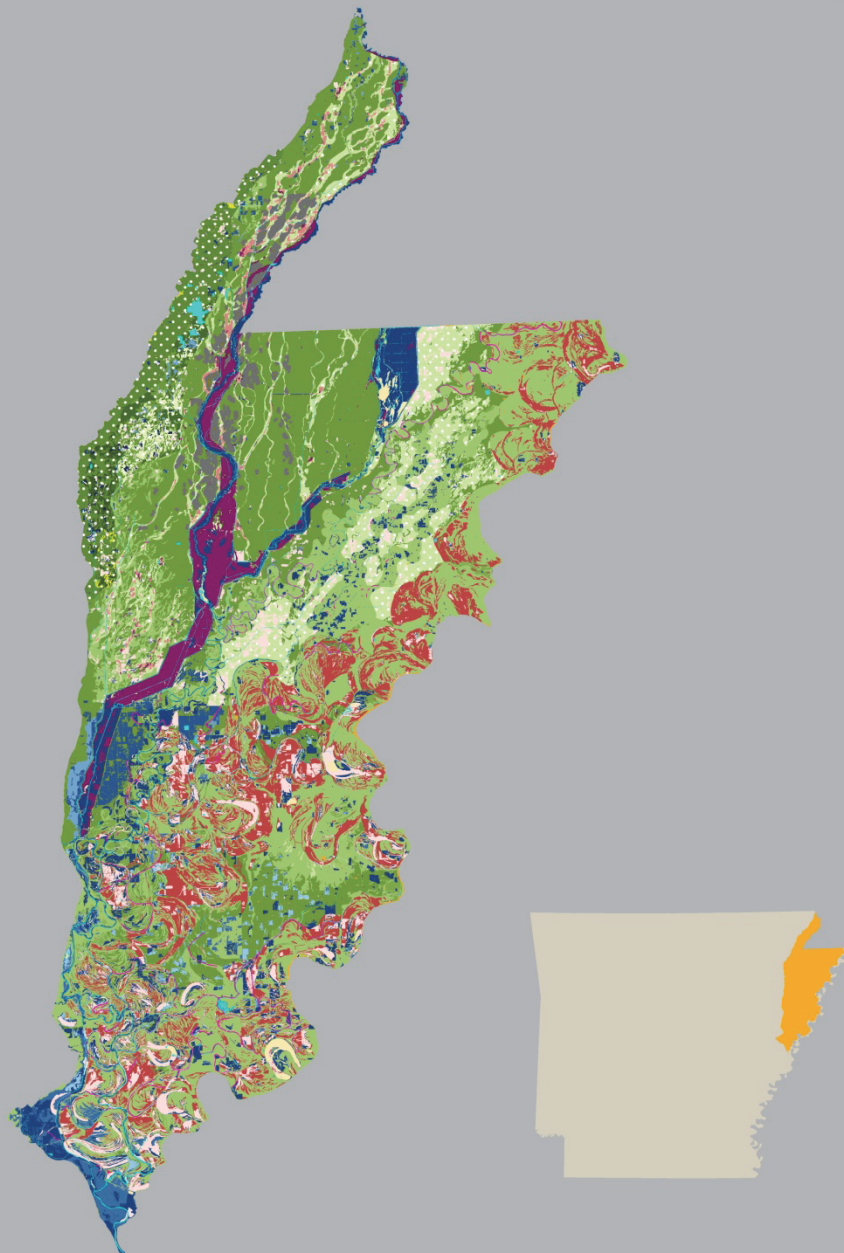
Figure A2. St. Francis Basin Map Index: Potential Natural Vegetation.

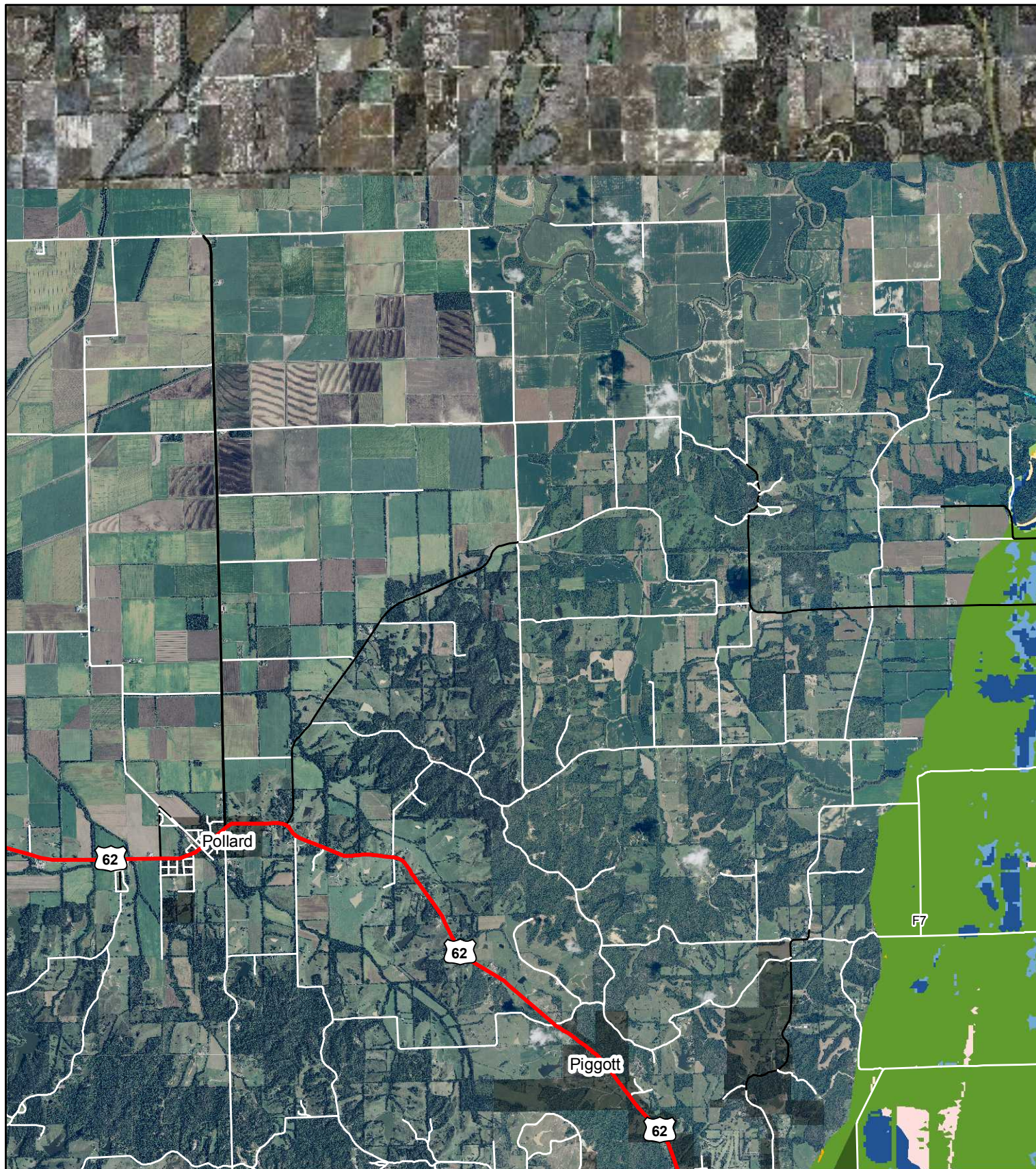|	POTENTIAL NATURAL VEGETATION MAP KEY, ST. FRANCIS BASIN, ARKANSAS	
HGM Subclass	**General Site Characteristics**	**Principal Dominant Species**
RIVERINE BACKWATER	WETLANDS MAINTAINED BY RIVERINE BACKWATER FLOODING	
RB2	Occasionally flooded, moderately-drained lowlands	Willow Oak–Water Oak
RB3	Occasionally flooded flats	Willow Oak
RB5	Occasionally flooded Pleistocene deposits	Willow Oak–Nuttall Oak
RB6	Frequently flooded Pleistocene deposits	Baldcypress–Overcup Oak–Bitter Pecan
RB7	Frequently flooded lowlands	Overcup Oak–Bitter Pecan
RB9	Post oak flatwoods (wet saline phase)	Delta Post Oak–Willow Oak
RIVERINE OVERBANK	WETLANDS MAINTAINED BY RIVERINE OVERBANK AND HEADWATER FLOODING	
RO2	River swamps in underfit channels	Baldcypress–Water Tupelo
RO4	Outwash channels in Late Pleistocene deposits and floodways	Mixed Lowland Hardwoods
FLAT	WETLANDS MAINTAINED BY PRECIPITATION	
F2	Well-drained recent alluvium in lowlands	Cherrybark Oak–Water Oak–Sweetgum
F4	Moderately drained lowlands	Sugarberry–Green Ash–American Elm
F6	Poorly-drained lowlands	Nuttall Oak–Willow Oak
F7	Poorly-drained undulating topography on Pleistocene outwash terraces	Willow Oak–Water Oak
F12	Alkali post oak flats	Post Oak–Willow Oak–Water Oak
F13	Hardwood flats, Early Wisconsin Valley Train and Deweyville Terraces (wet phase)	Delta Post Oak–Willow Oak
F16	Willow oak flatwoods (wet phase)	Willow Oak–Green Ash
F17	Willow oak flatwoods (dry phase)	Cherrybark Oak–Delta Post Oak–Willow Oak
F18	Post oak flatwoods (wet phase)	Delta Post Oak–Willow Oak
F19	Post oak flatwoods (dry phase)	Post Oak–Southern Red Oak
DEPRESSION	WETLANDS IN DEPRESSIONS	
D1	Stream-connected depressions in abandoned channels	Baldcypress–Water Tupelo
D2	Stream-connected depressions on Pleistocene outwash terraces	Baldcypress–Water Tupelo
D3	Unconnected depressions in abandoned channels	Baldcypress–Water Tupelo
FRINGE	WETLANDS FRINGING WATER BODIES	
FR1	Stream-connected lake and pond fringe wetlands	Baldcypress–Buttonbush–Emergents
FR2	Unconnected lake and pond fringe wetlands	Baldcypress–Buttonbush–Emergents
UPLAND	UPLANDS	
U2	Well-drained soils of the Pleistocene terraces	Mixed Hardwood and Pine
U4	Pleistocene dunefields and barrens	Black Oak–Post Oak–Southern Red Oak
WATER	WATER	
W	Permanent water bodies other than lakes and ponds (fringe)	Streams and major drainage ditches

Figure A3. Map legend.

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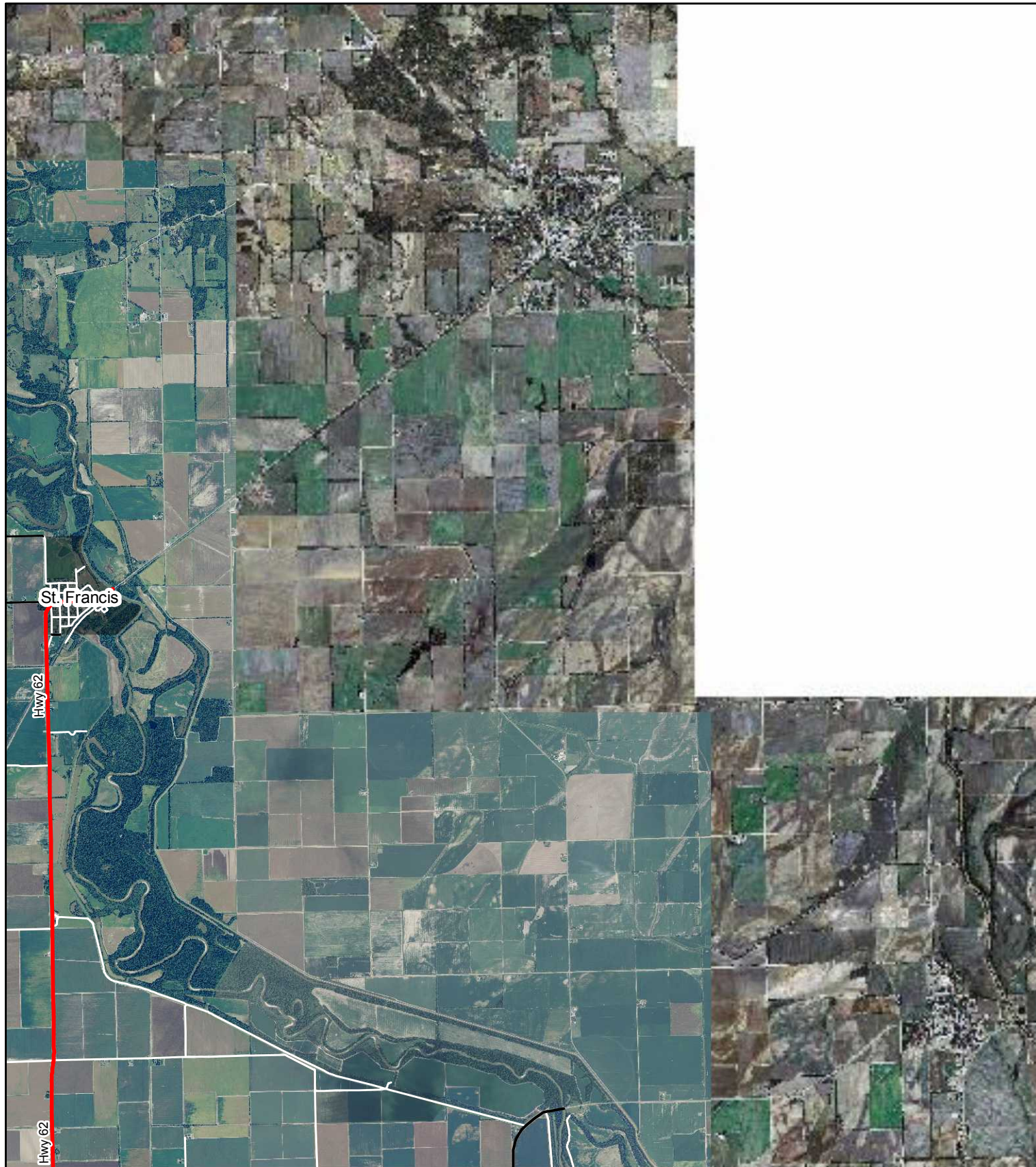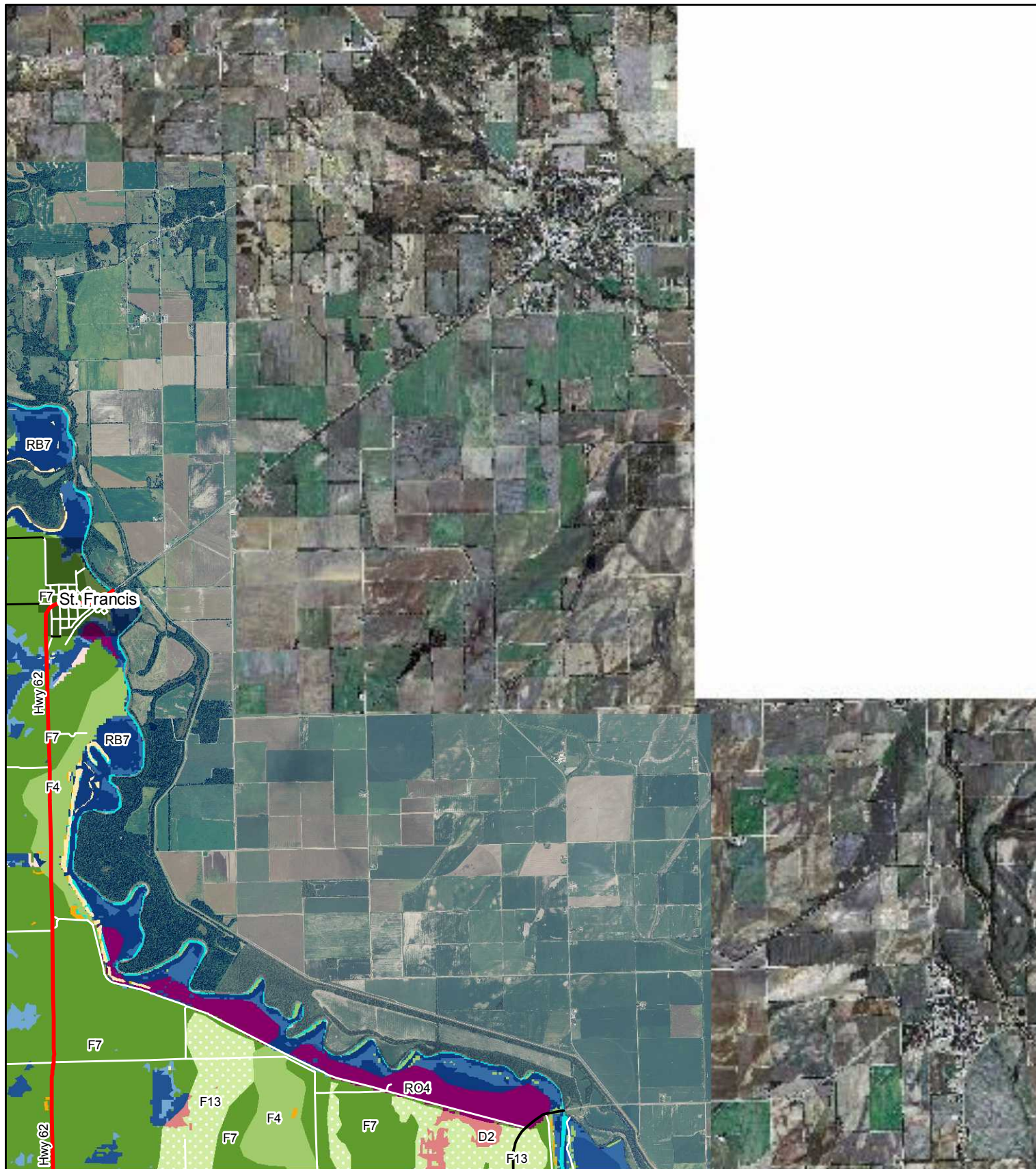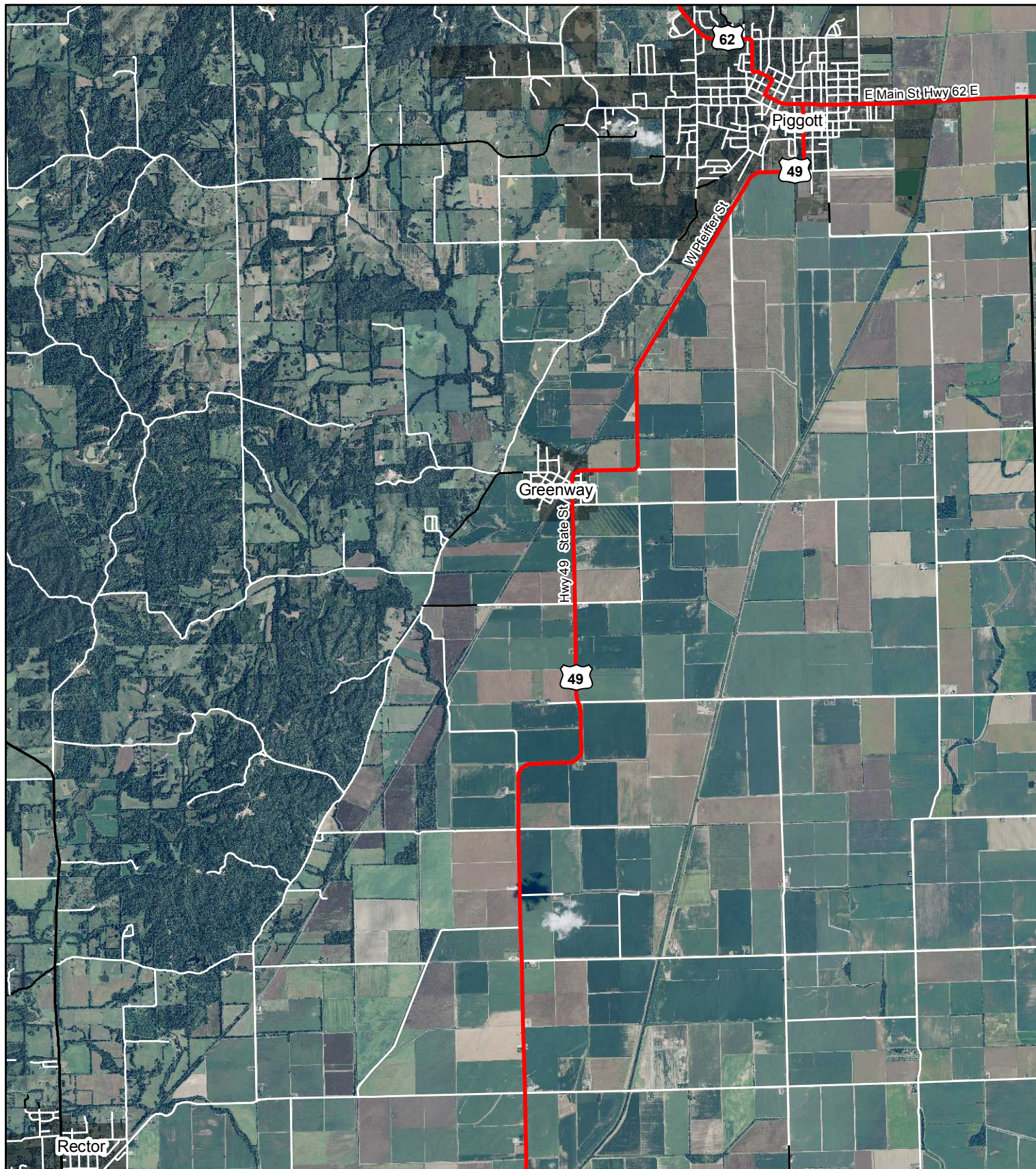   Miles

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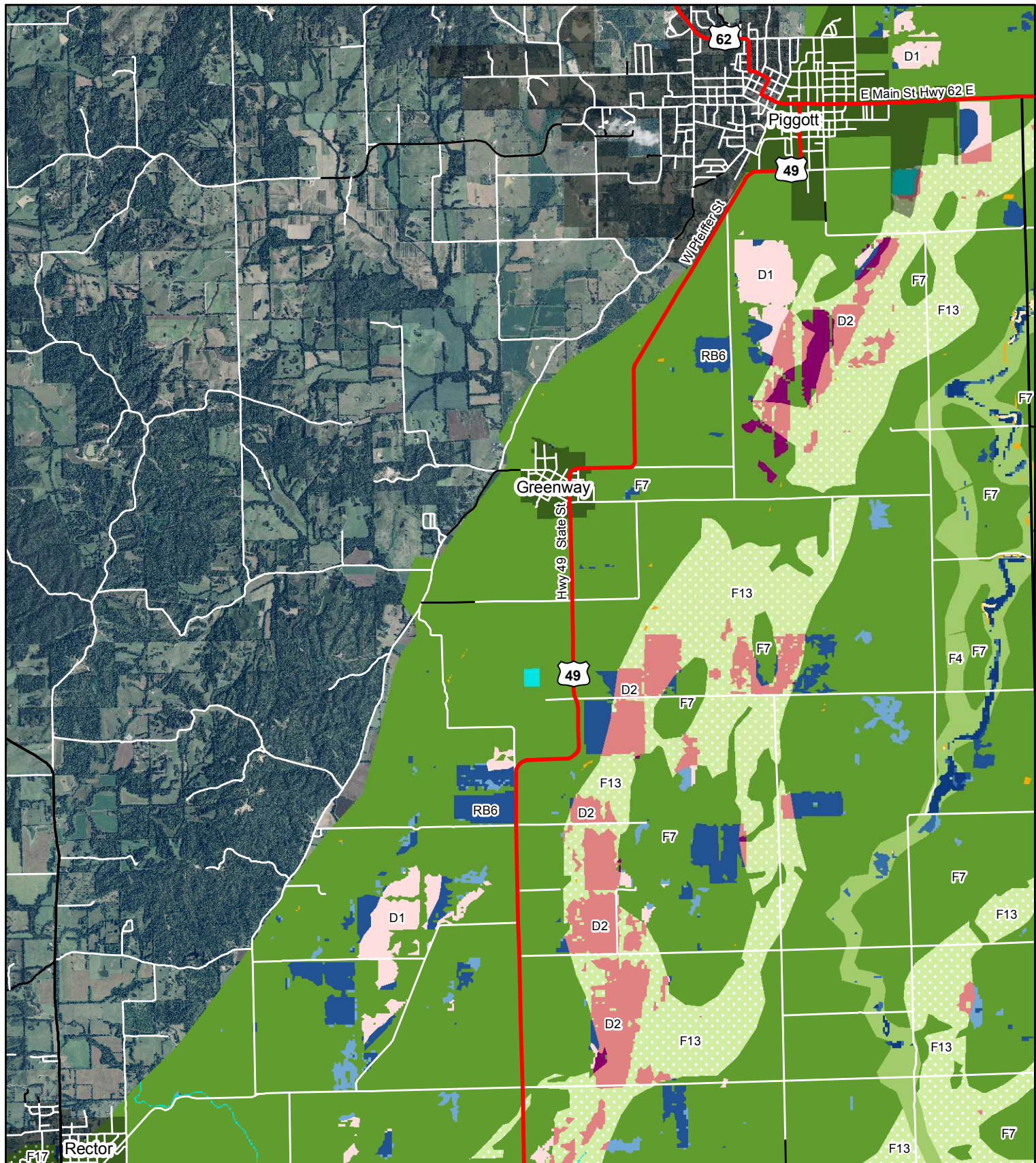
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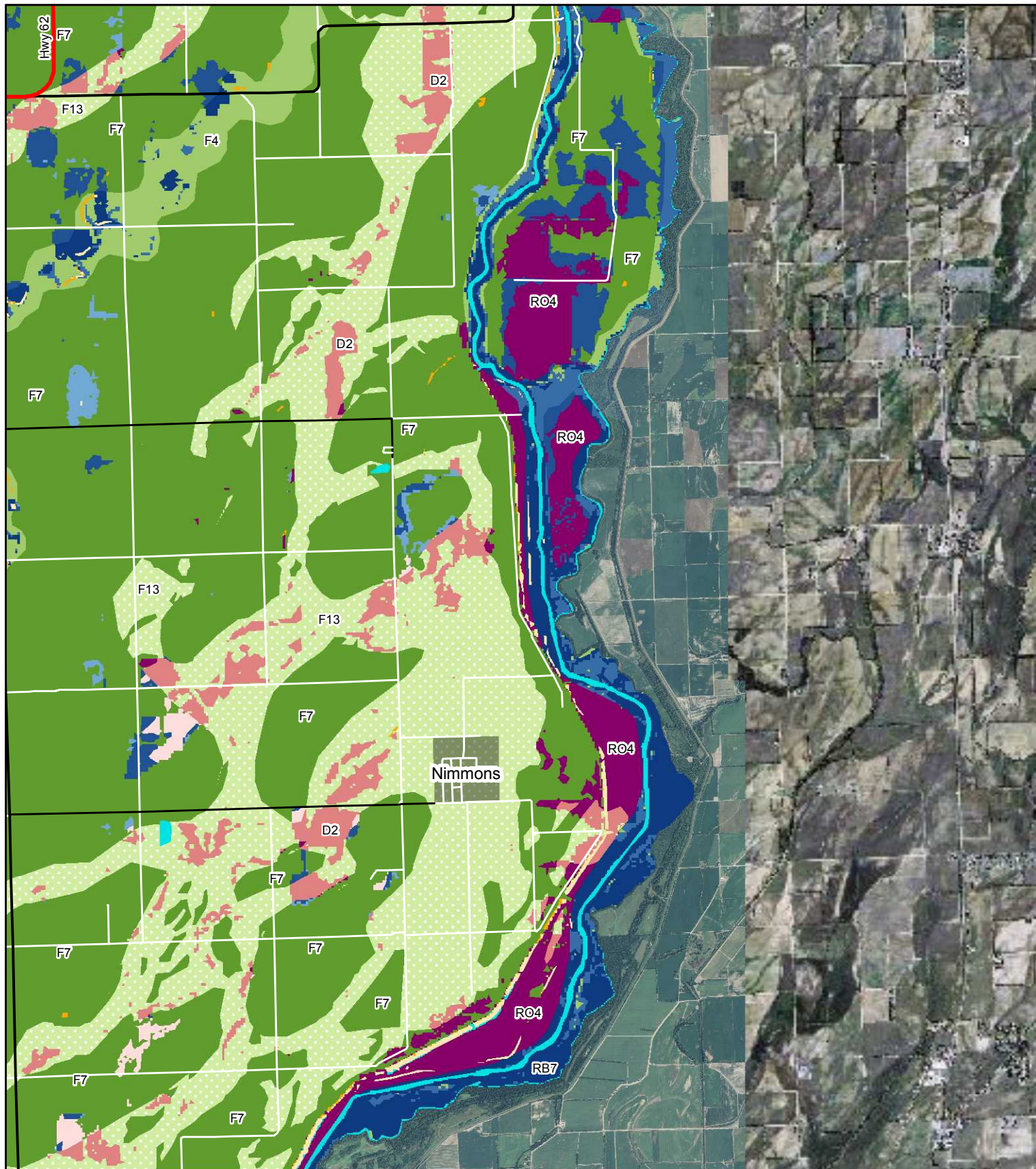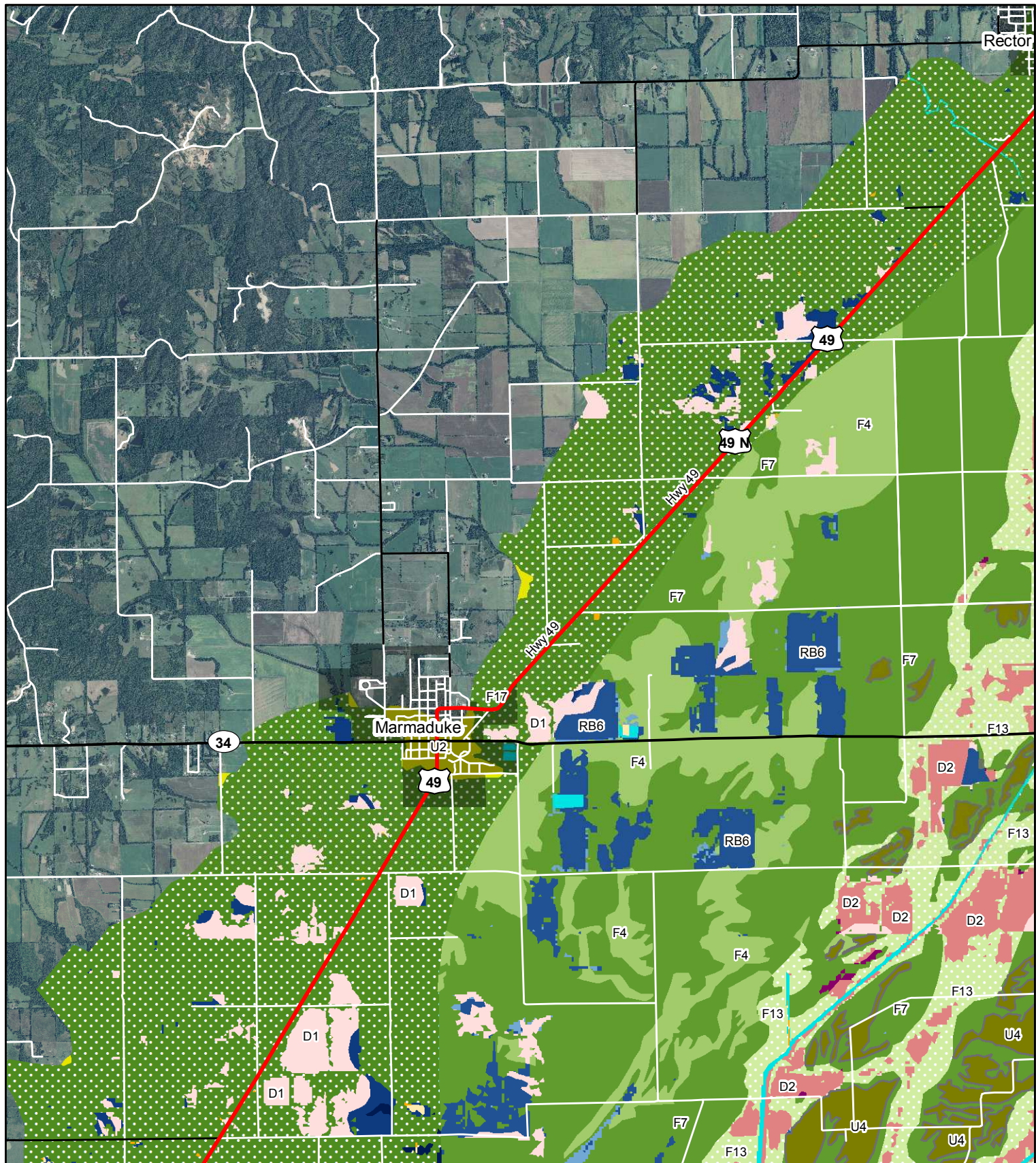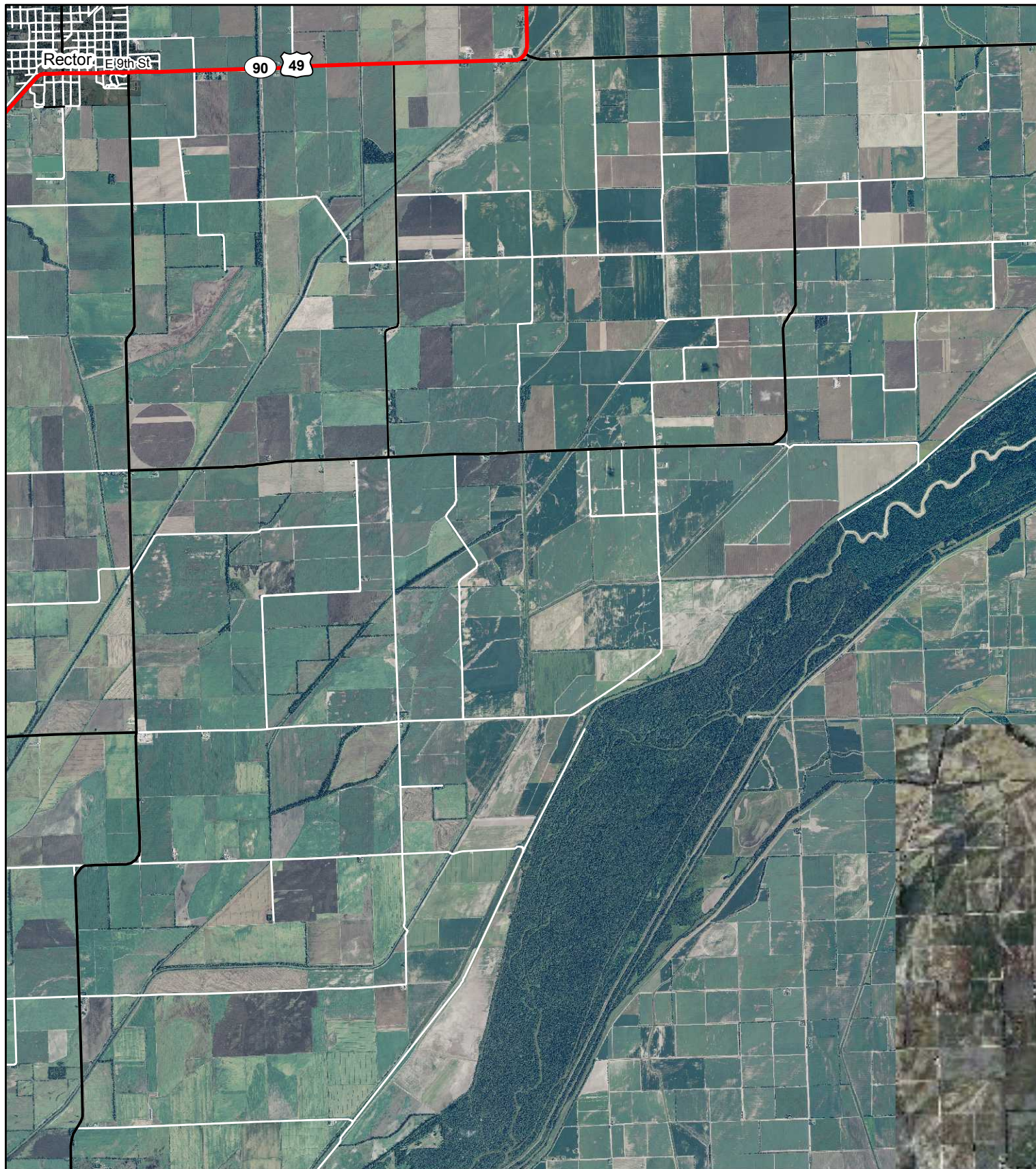
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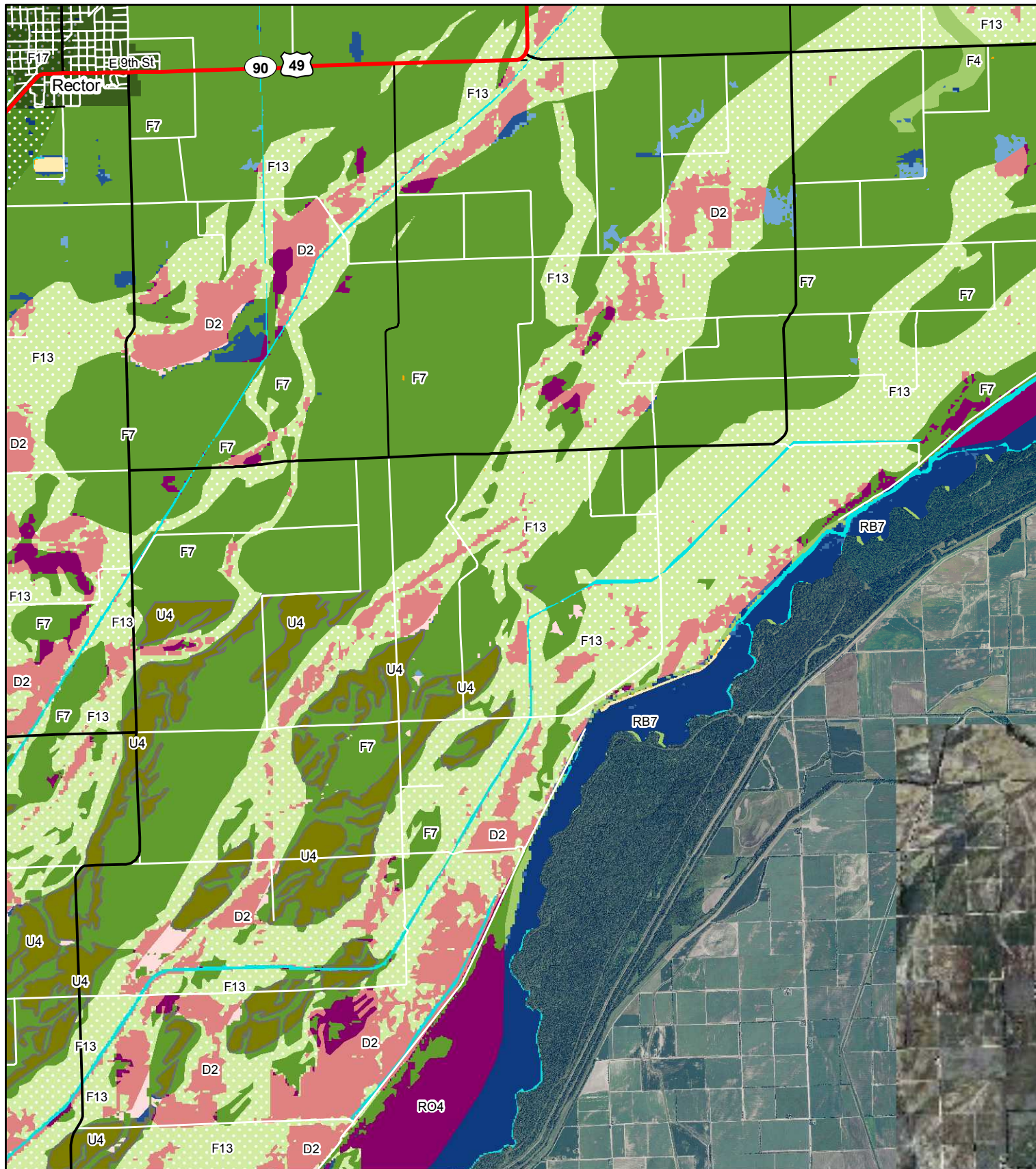Projection: Transverse Mercator
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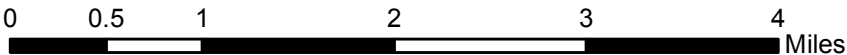
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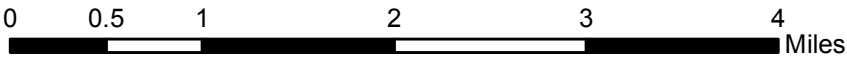Datum: North American 1983

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N

Coordinate System: NAD 1983 UTM Zone 15N
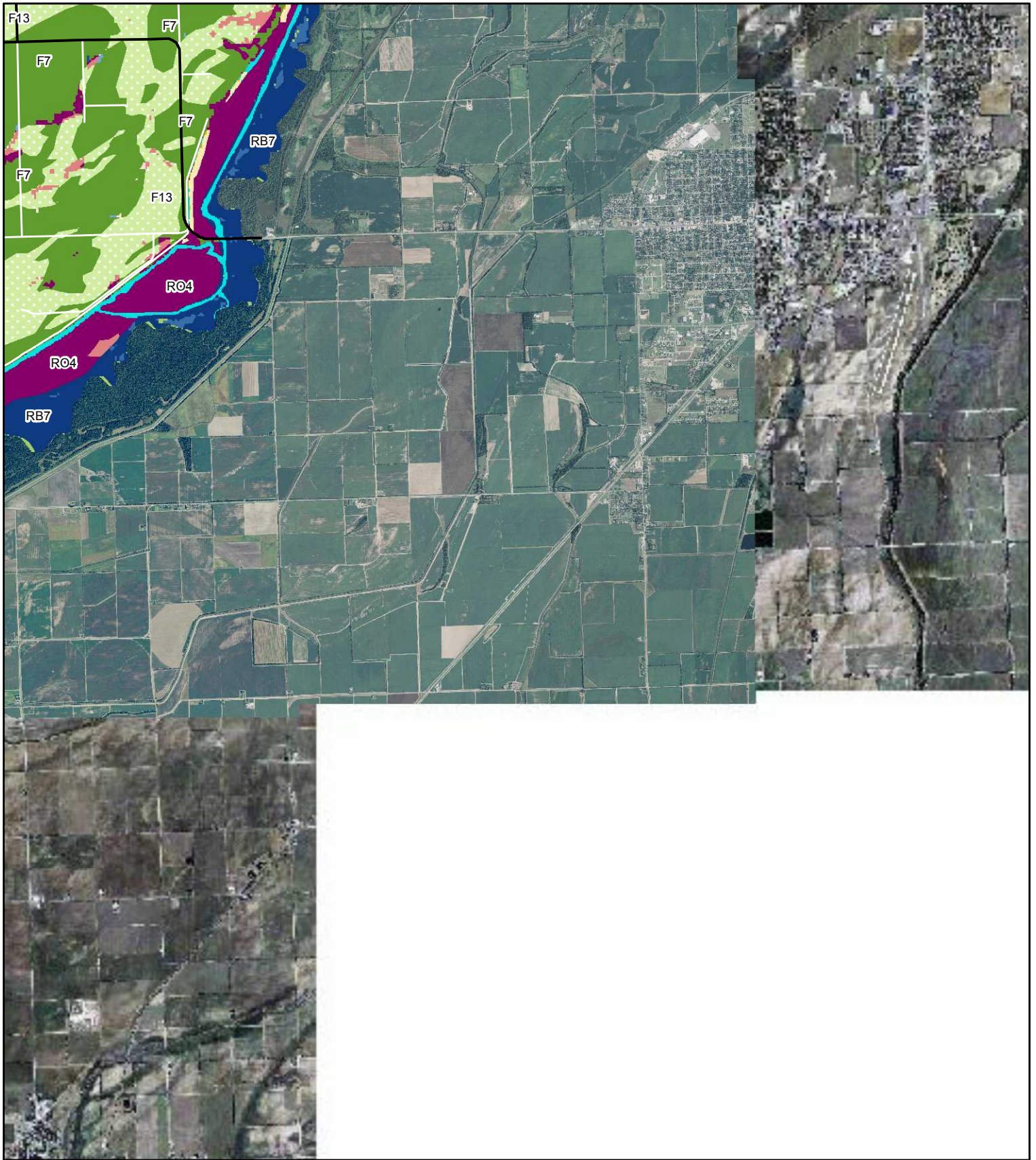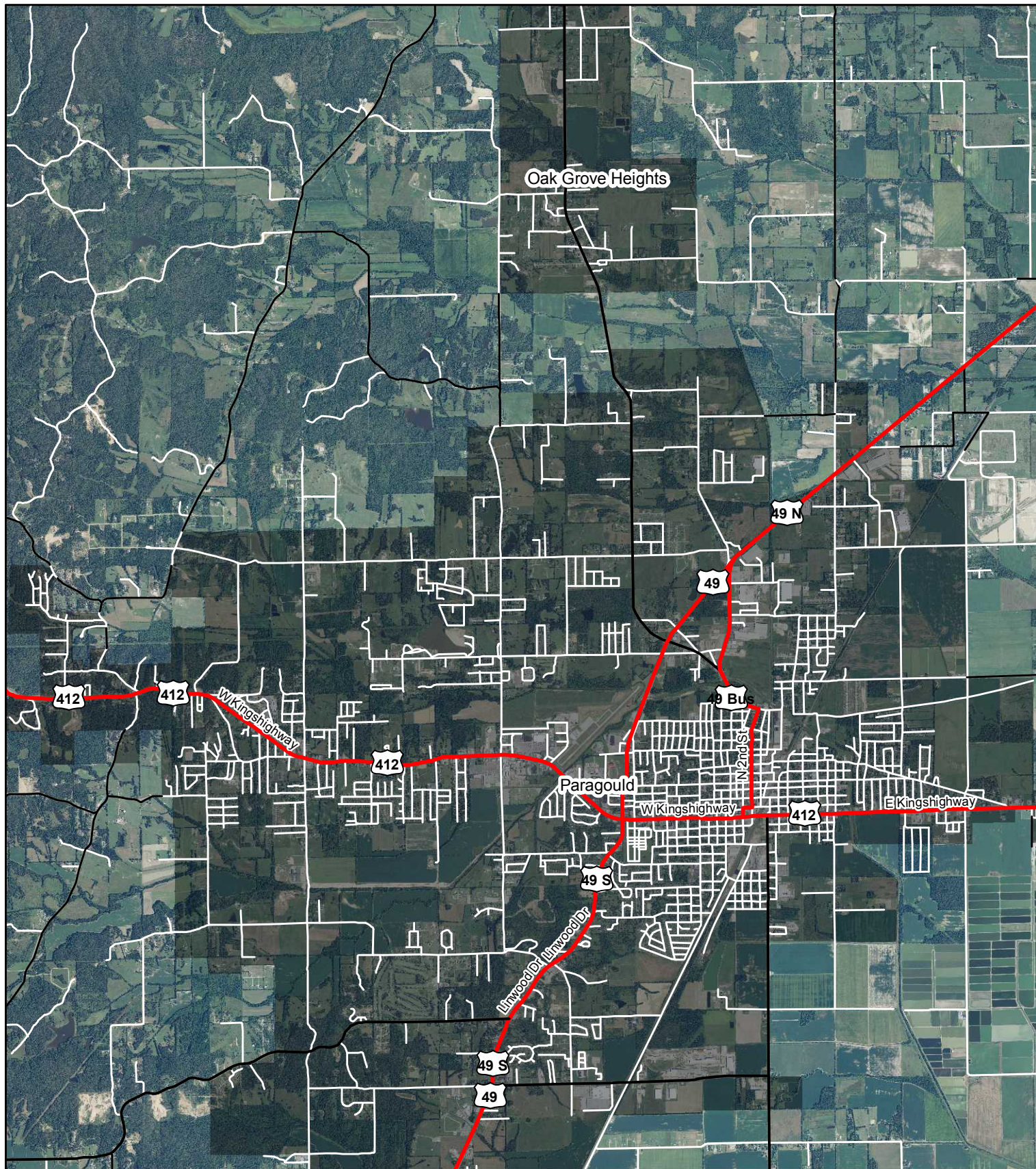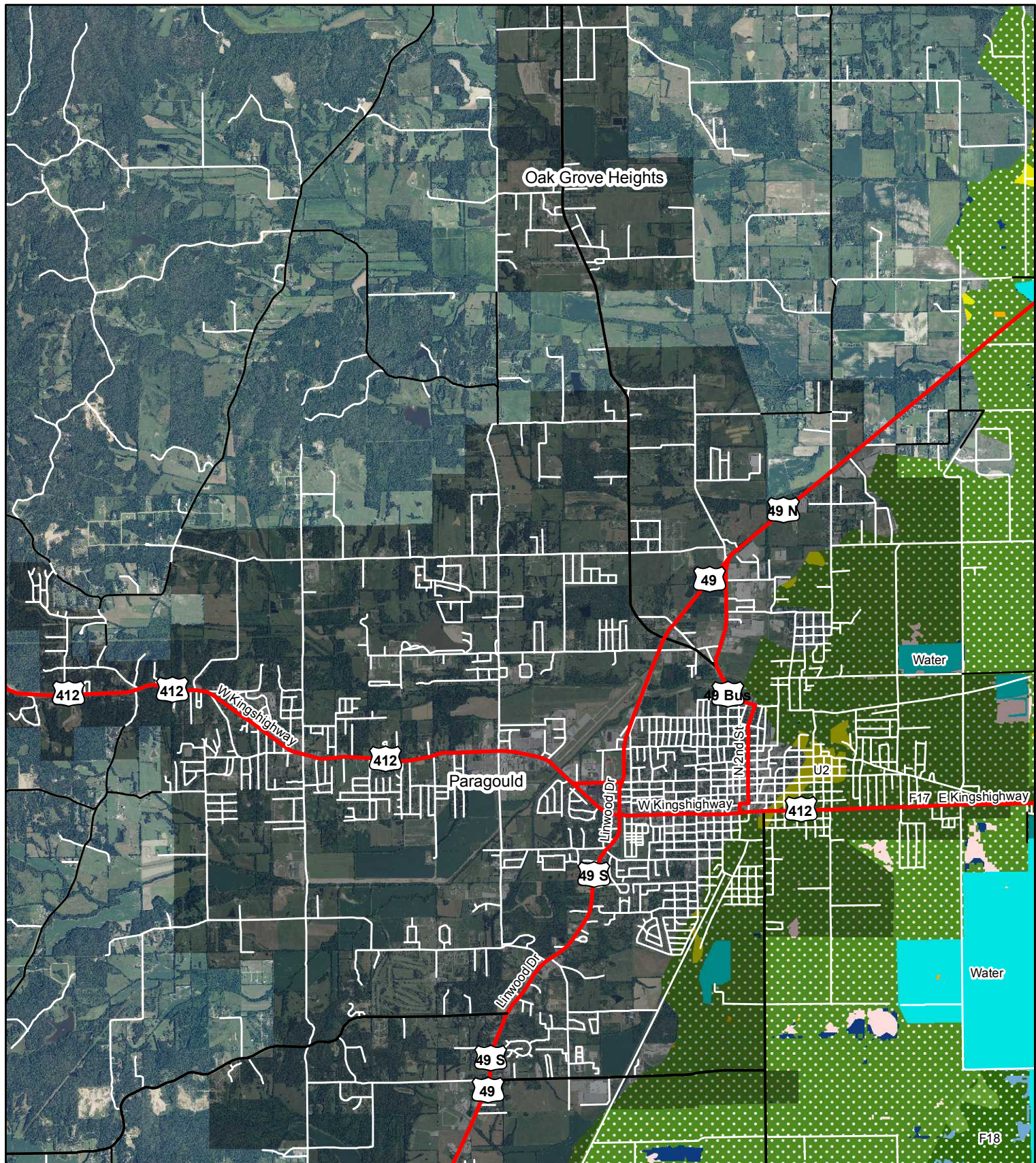Projection: Transverse Mercator
Datum: North American 1983

F13

F7

F7

F7

F7

F7

RB7

F13

RO4

RO4

RB7

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Oak Grove Heights

49 N

49

412   412   412   412   49 Bus

W Kingshighway

Paragould

N 2nd St

W Kingshighway   412   E Kingshighway

49 S

Linwood Dr   Linwood Dr

49 S

49

0   0.5   1   2   3   4
Miles

D13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Oak Grove Heights

49 N

49

49 Bus

412 412 412 W Kingshighway

412

Paragould

Linwood Dr

W Kingshighway

N 2nd St

U2

F17 E Kingshighway

412

Water

49 S

Linwood Dr

49 S

49

Water

F18

0 0.5 1 2 3 4 Miles

D13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

49

49 N

Paragould **412**

412

412

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

D14

0   0.5   1   2   3   4
Miles

D15

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
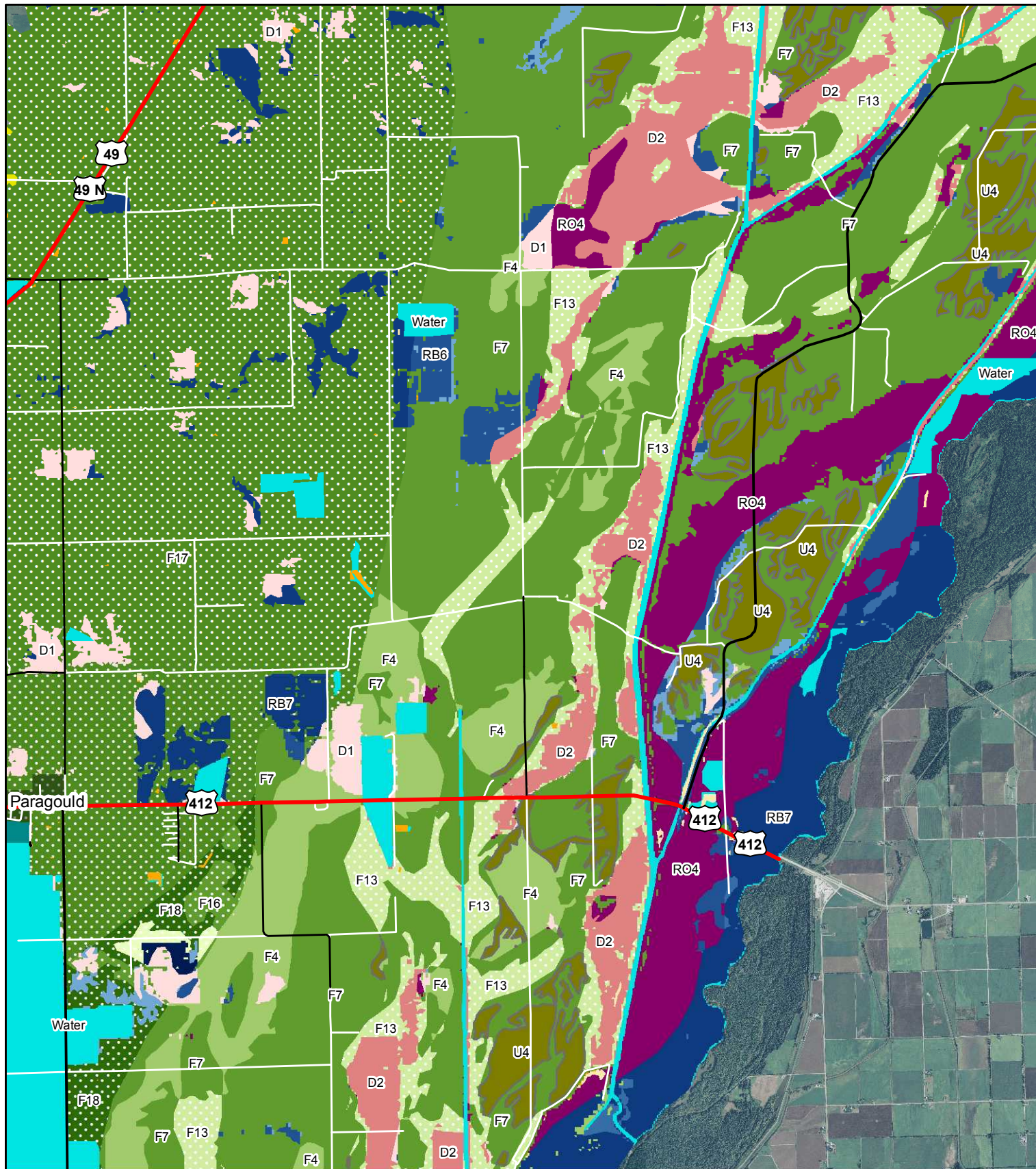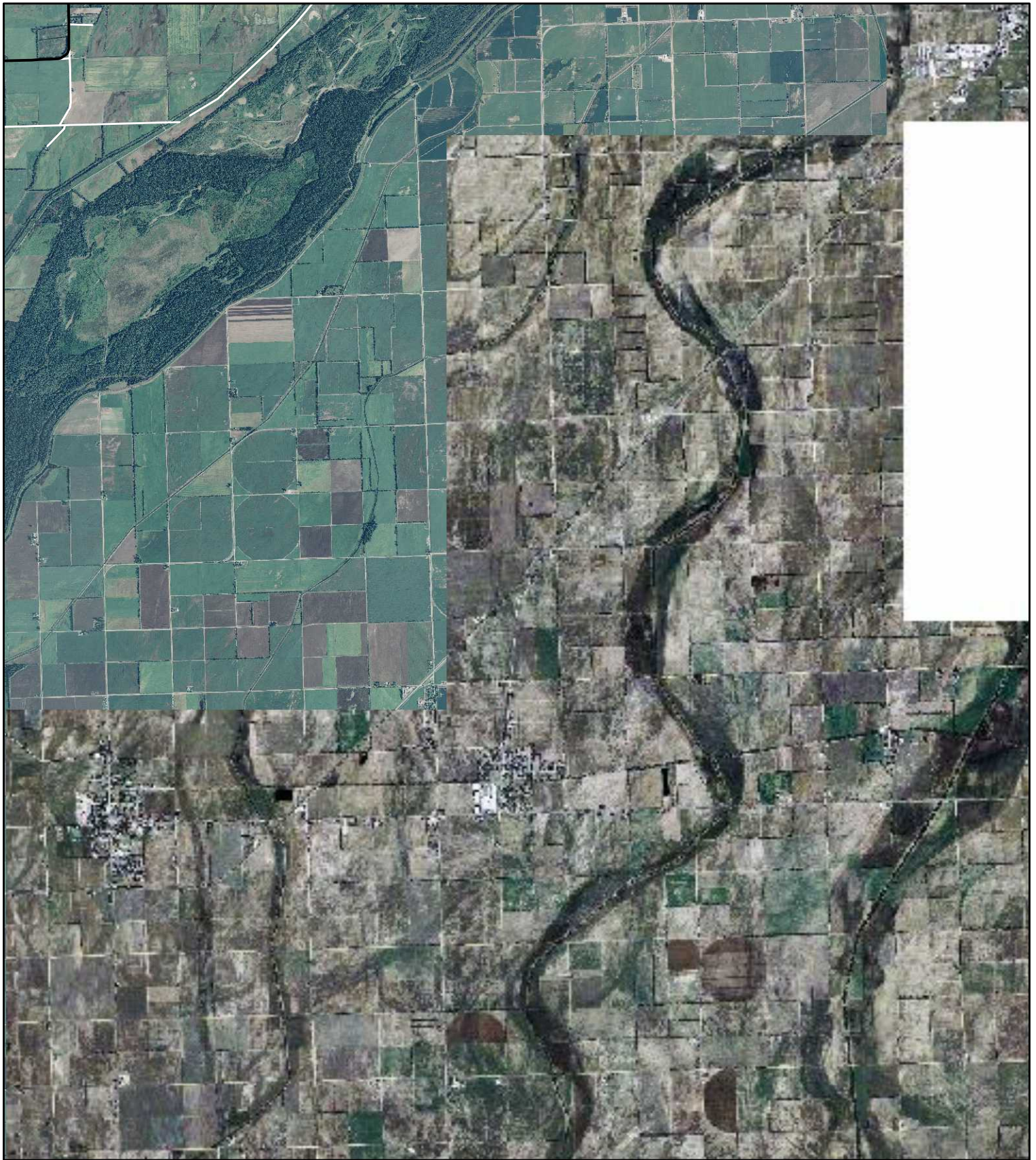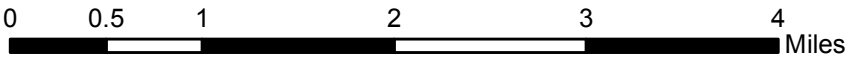Datum: North American 1983

N

F7
F13
F7
U4
RO4
F7
RB7

0   0.5   1   2   3   4
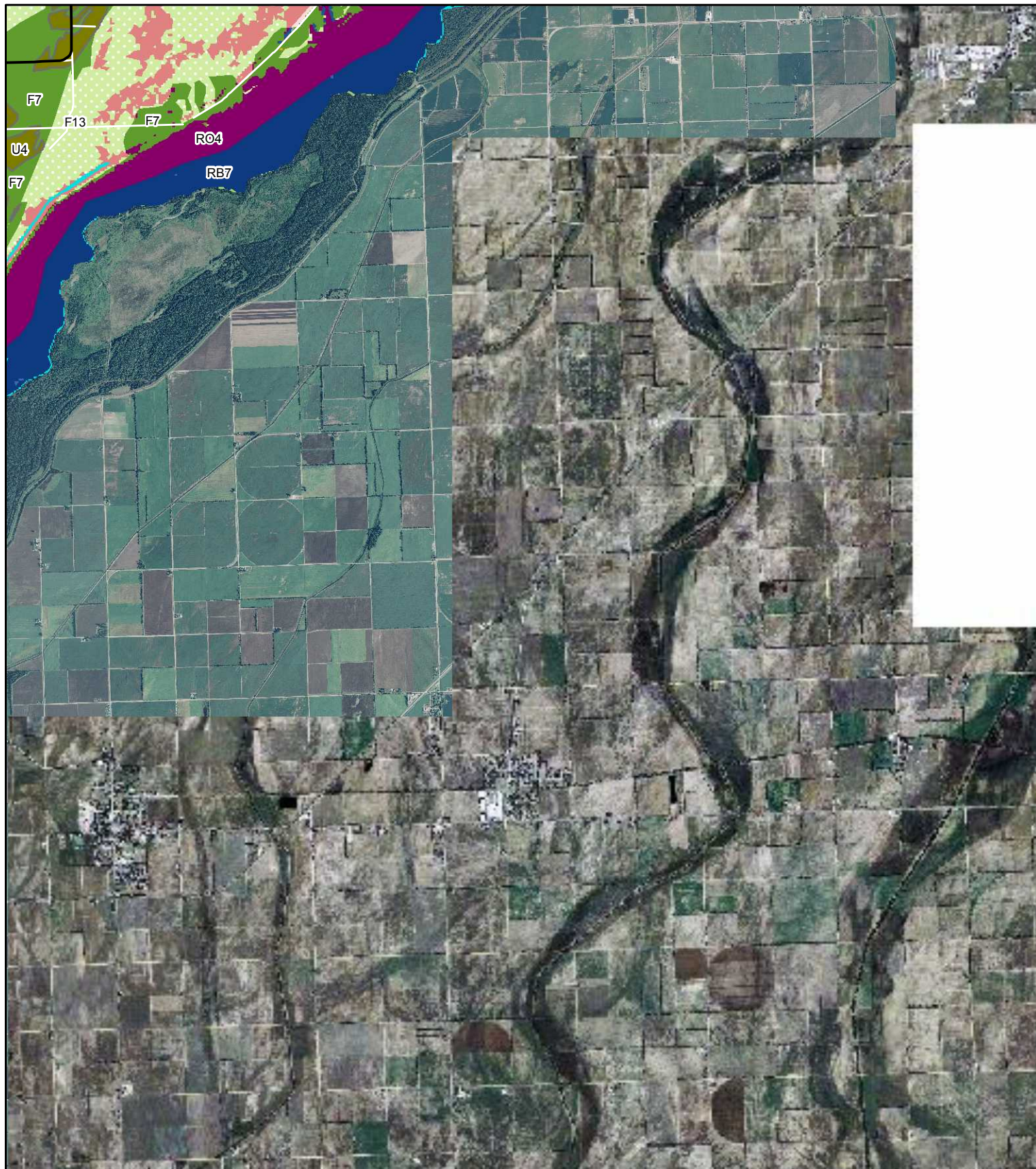Miles

D15

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

0   0.5   1   2   3   4
Miles

D18

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

0   0.5   1   2   3   4

Miles

D18

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N
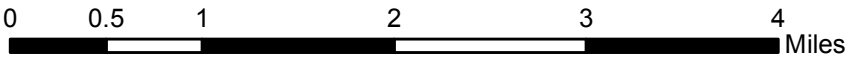
0   0.5   1   2   3   4
                                          Miles

D19

Coordinate System: NAD 1983 UTM Zone 15N
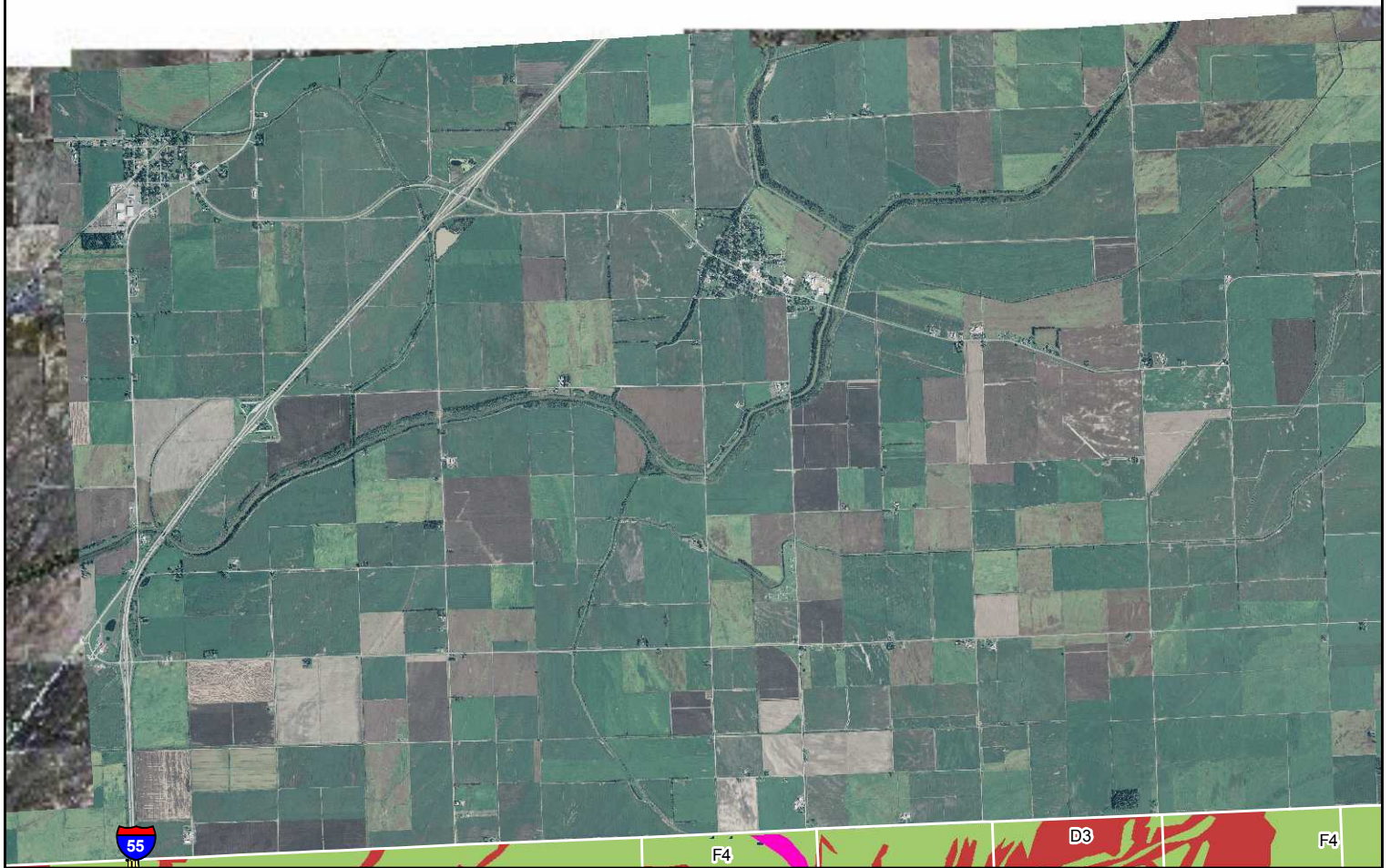Projection: Transverse Mercator
Datum: North American 1983

N

137

F4
137

0   0.5   1   2   3   4
Miles

D19

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N Old Greensboro Rd

Jonesboro

351

141

0   0.5   1   2   3   4
Miles

E12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

351

141

N Old Greensboro Rd

Jonesboro

Paragould

49

49 S

49

49 Bus

230

N Holman St

Brookland

49

0   0.5   1   2   3   4
                                                        Miles

E13

N

Coordinate System: NAD 1983 UTM Zone 15N
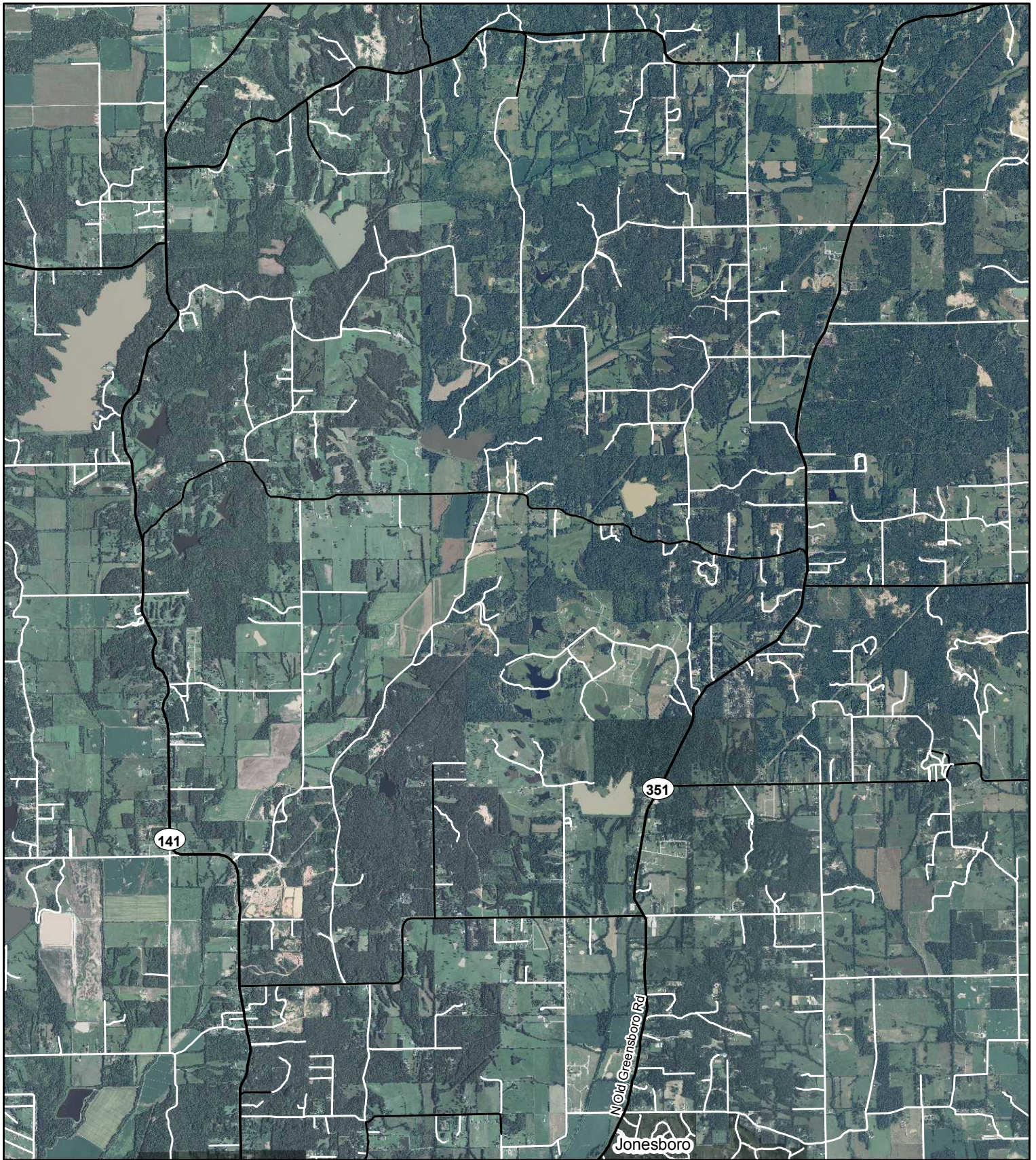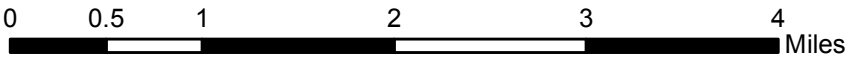Projection: Transverse Mercator
Datum: North American 1983

Paragould

49

49 S

U2

F16

Water

F18

Water

RB3

F18

F18

F4

F12

49

F16

F17

RB7

F16

F18

F18

RB3

49 Bus

RB3

F12

RB3

230

F16

F18

F7

D1

F18

F16

F12

F18

F16

Brookland

49

F16

F18

F12

U4

N Holman St

0	0.5	1	2	3	4

Miles

E13

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

135

Co Rd 997

Edmonds St

Monette
18   139

0   0.5   1   2   3   4
                                              Miles

E14

N

Coordinate System: NAD 1983 UTM Zone 15N
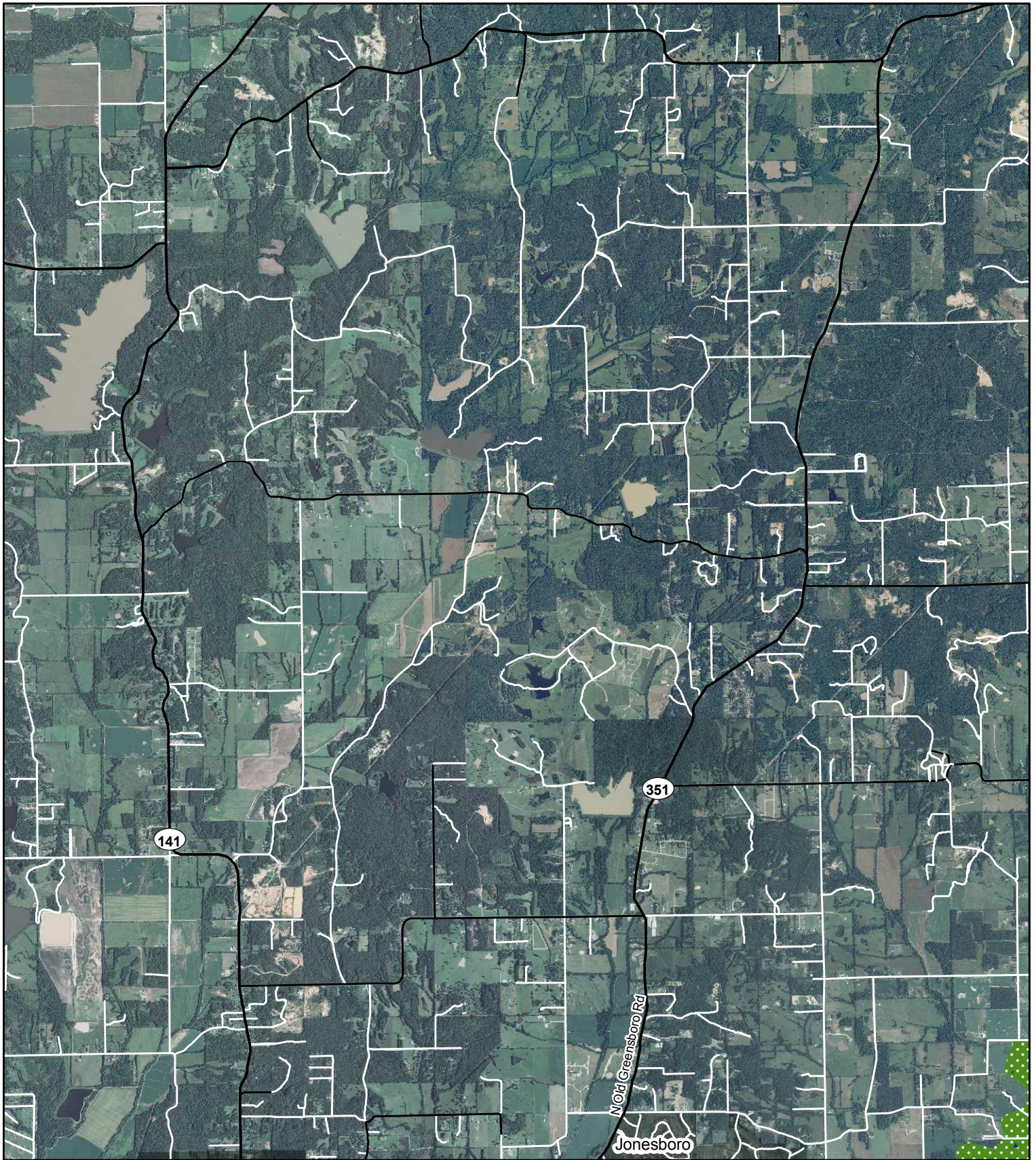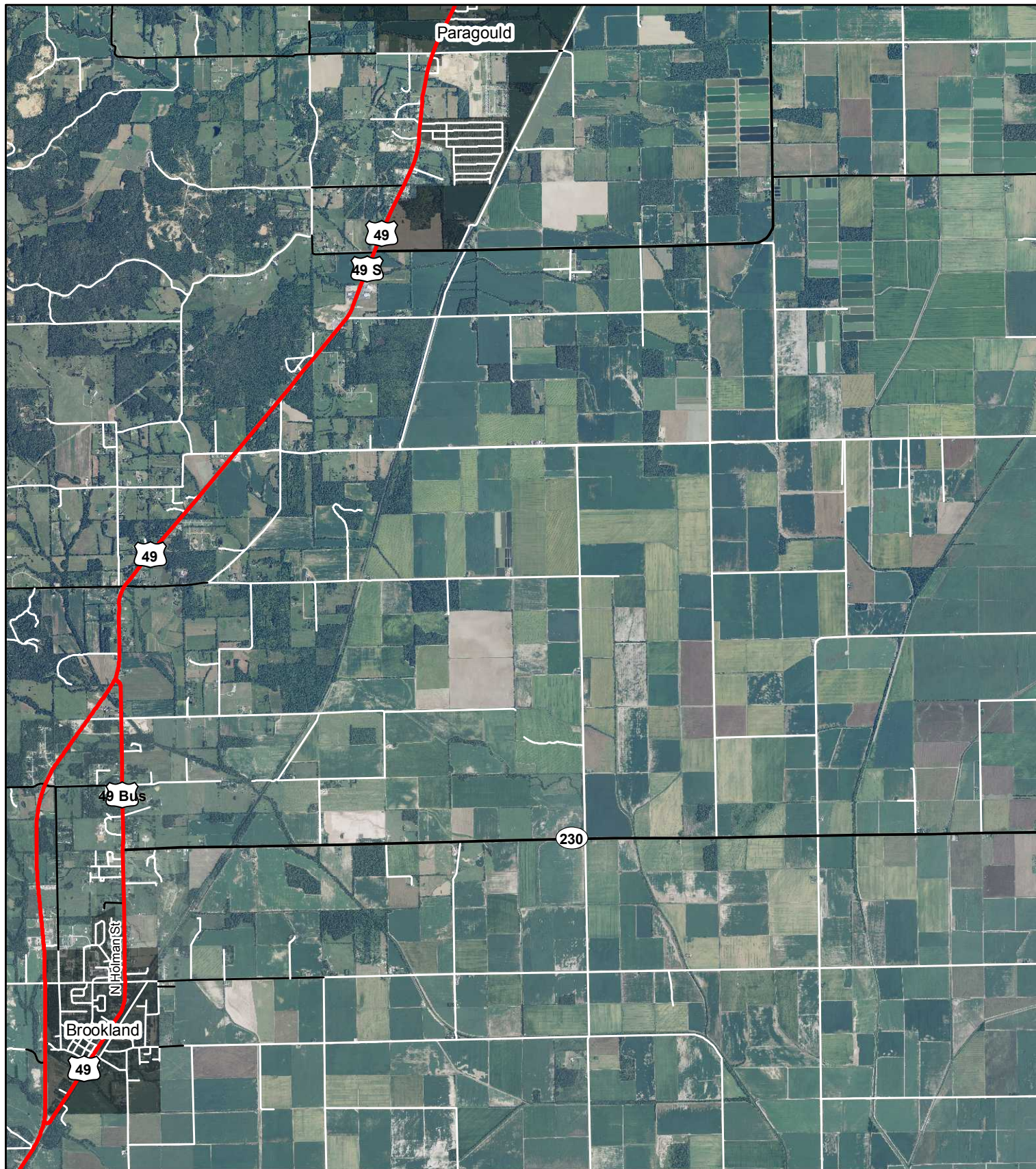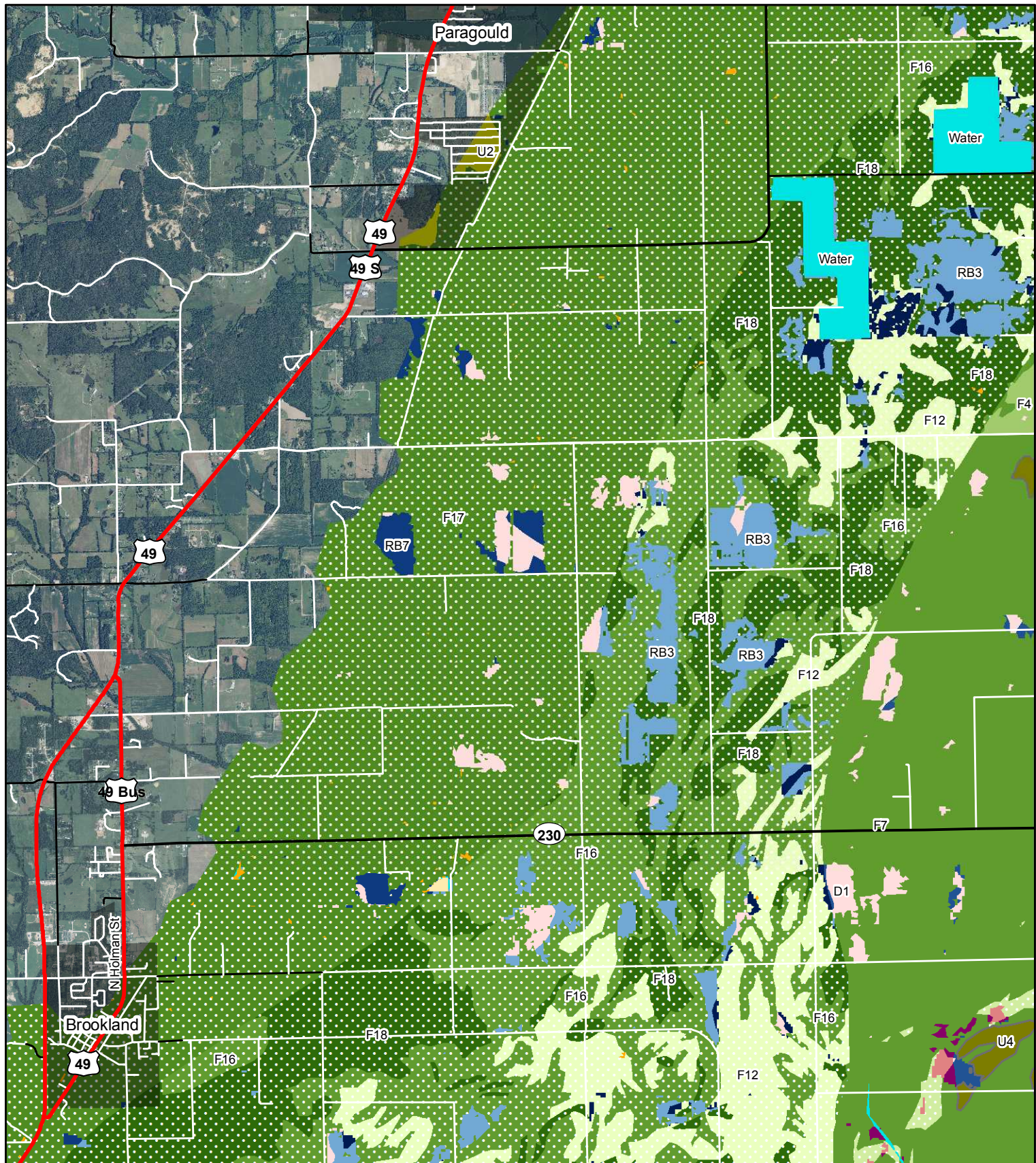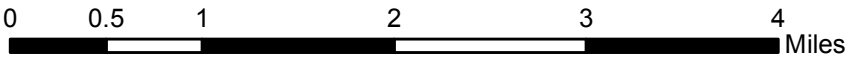Projection: Transverse Mercator
Datum: North American 1983

F12
F13
F4
F7
F18
F7
F7
D2
RB7
F7
U4
RB7
F13
U4
D1
U4
F7
F7
F7
F13
F7
D2
F7
U4
135
U4
F7
U4
F7
RO4
F13
F7
F7
F7
F7
D2
U4
U4
F7
U4
D1
U4
U4
F7
F7
D2
RB7
U4
F7
RO4
F7
F7
U4
F7
F13
F7
F7
Edmonds St
U4
F7
Monette
18
139
F7
F7
U4
RO4
F13
RO4

0   0.5   1   2   3   4
Miles

E14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
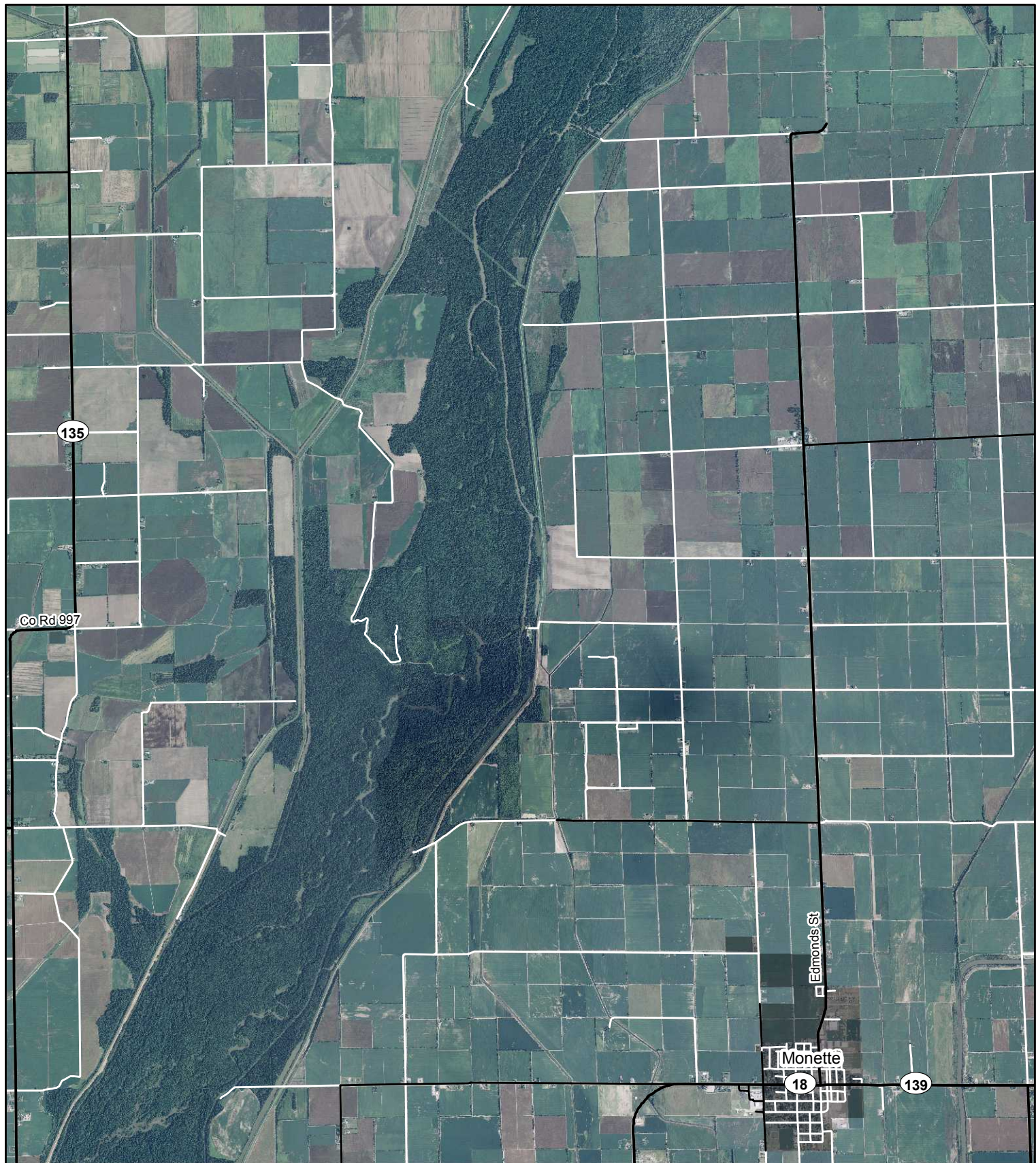Datum: North American 1983

N

77

77

N Main St

E 3rd St

Leachville

119 77

119

S Main St

18

18

Manila

77

E15

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

F13

F7

F13

F13

F7

77

77

F7

F7

F13

F7

F13

N Main St

Leachville

E 3rd St

F13

F13

119   77

F13

F13

F13

D2

U4

119

F7

S Main St

F7

F13

F7

18

18

Manila

F7

F13

77

F7

0   0.5   1   2   3   4
                                    Miles

E15

N

Coordinate System: NAD 1983 UTM Zone 15N
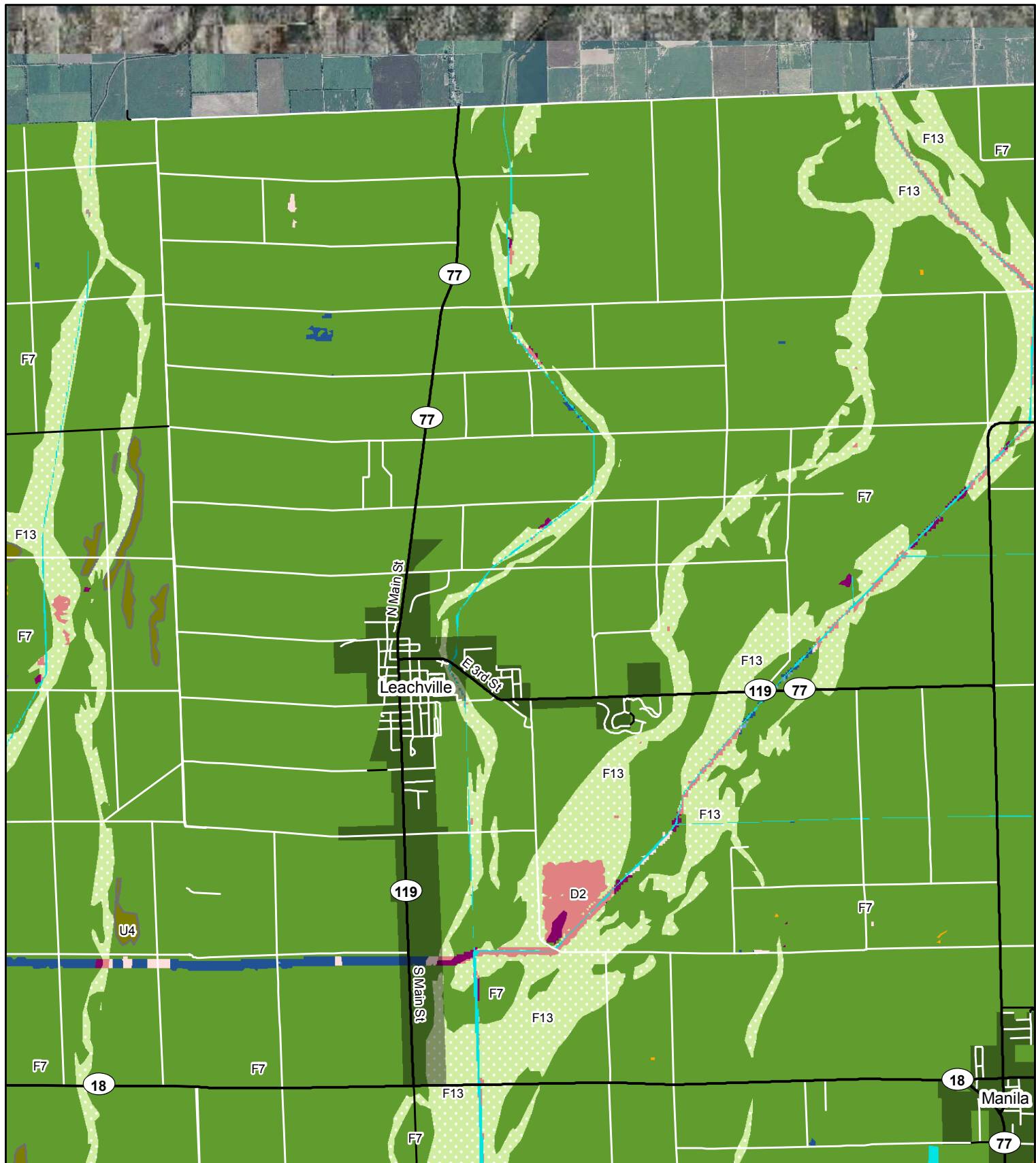Projection: Transverse Mercator
Datum: North American 1983

119

State Hwy

239

Moody St

181

Manila

18 Bus

18 Bus

0   0.5   1   2   3   4
Miles

E16

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

F7

RB7

F4

D1

D1

D1

D1

D1

RB7

RB7

RB7

119

RB7

Water

F13

State Hwy

RB7

D1

D1

RB7

239

RB7

FR1

D1

Moody St

Manila

18 Bus

RB7

D1

18 Bus

FR1

F7

D1

181

F4

RB7

F13

0   0.5   1   2   3   4
                                                    Miles

E16

Coordinate System: NAD 1983 UTM Zone 15N
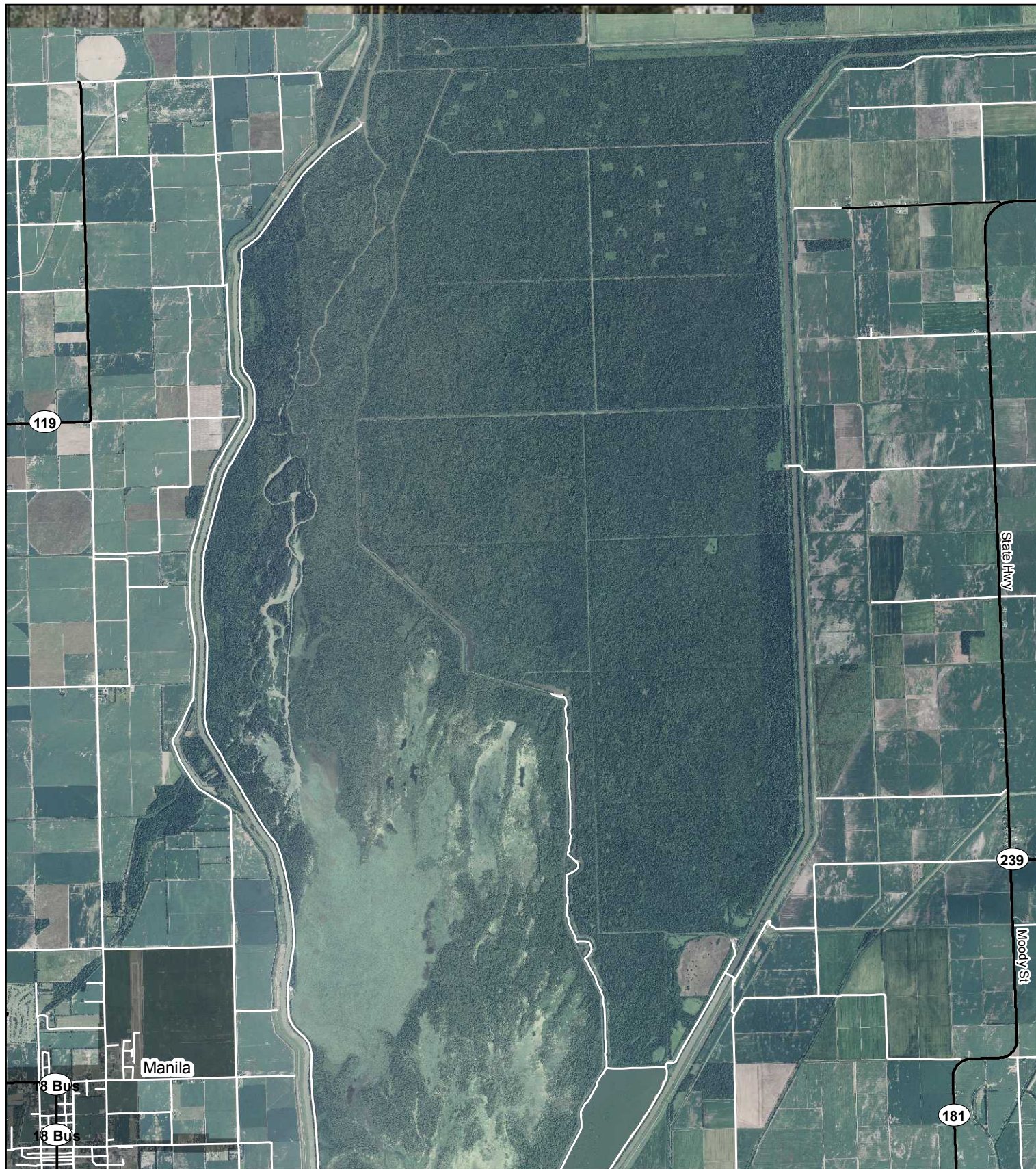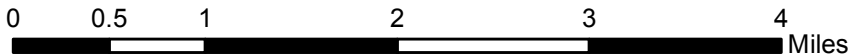Projection: Transverse Mercator
Datum: North American 1983

N

61

150

150

150

150 Spr

61

61

61

N 6th St

S Air Base Hwy

181

151

Gosnell

Blytheville

61

61

61

61

W Main St

E Main St

239

18

239

61

239

S Division St

55

61

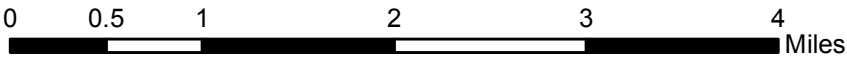0   0.5   1   2   3   4
Miles

E17

N
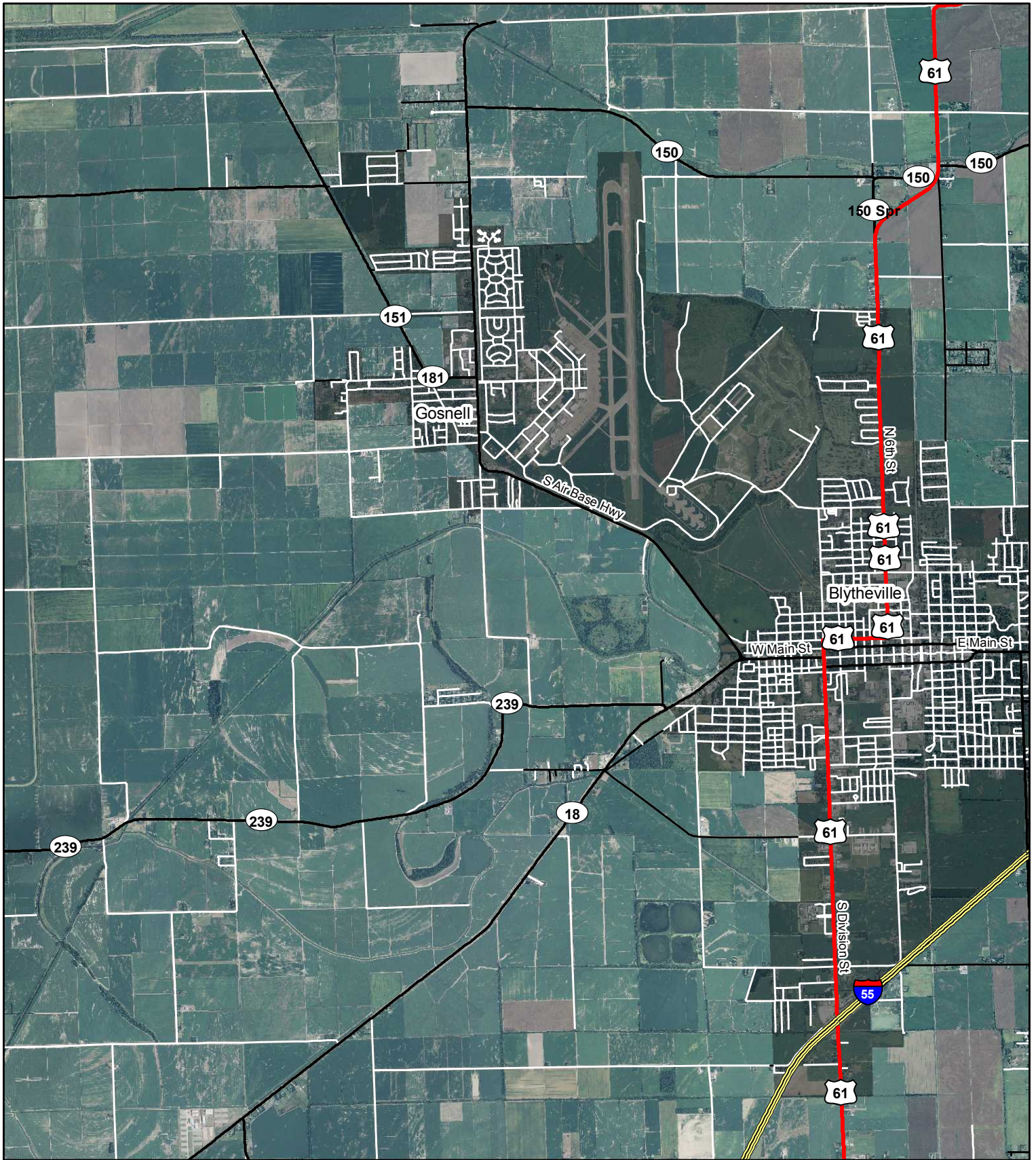
Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

E17

N
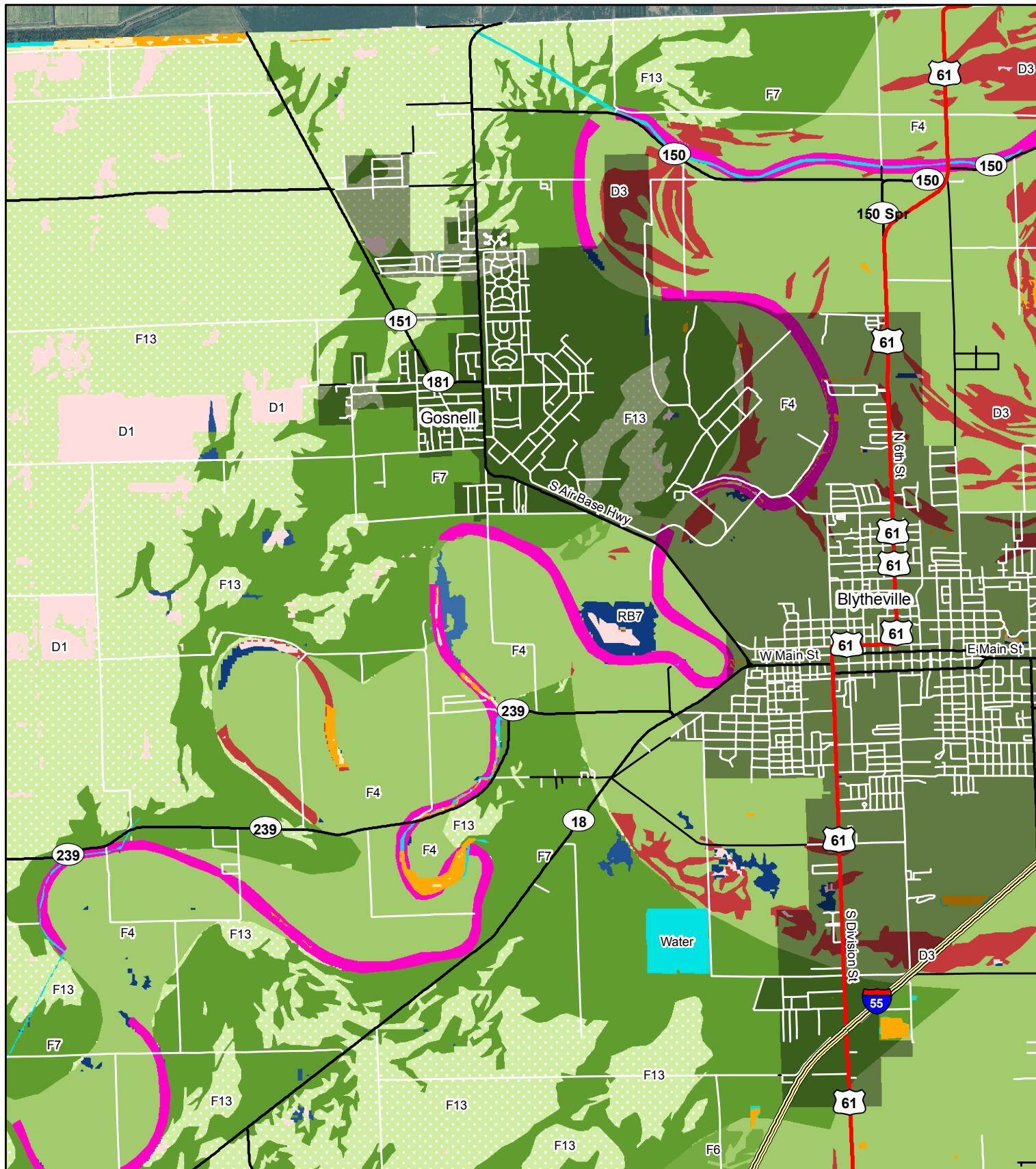
0   0.5   1   2   3   4
Miles

E18

150

N Co Rd 919

E Main St

151 18

Blytheville
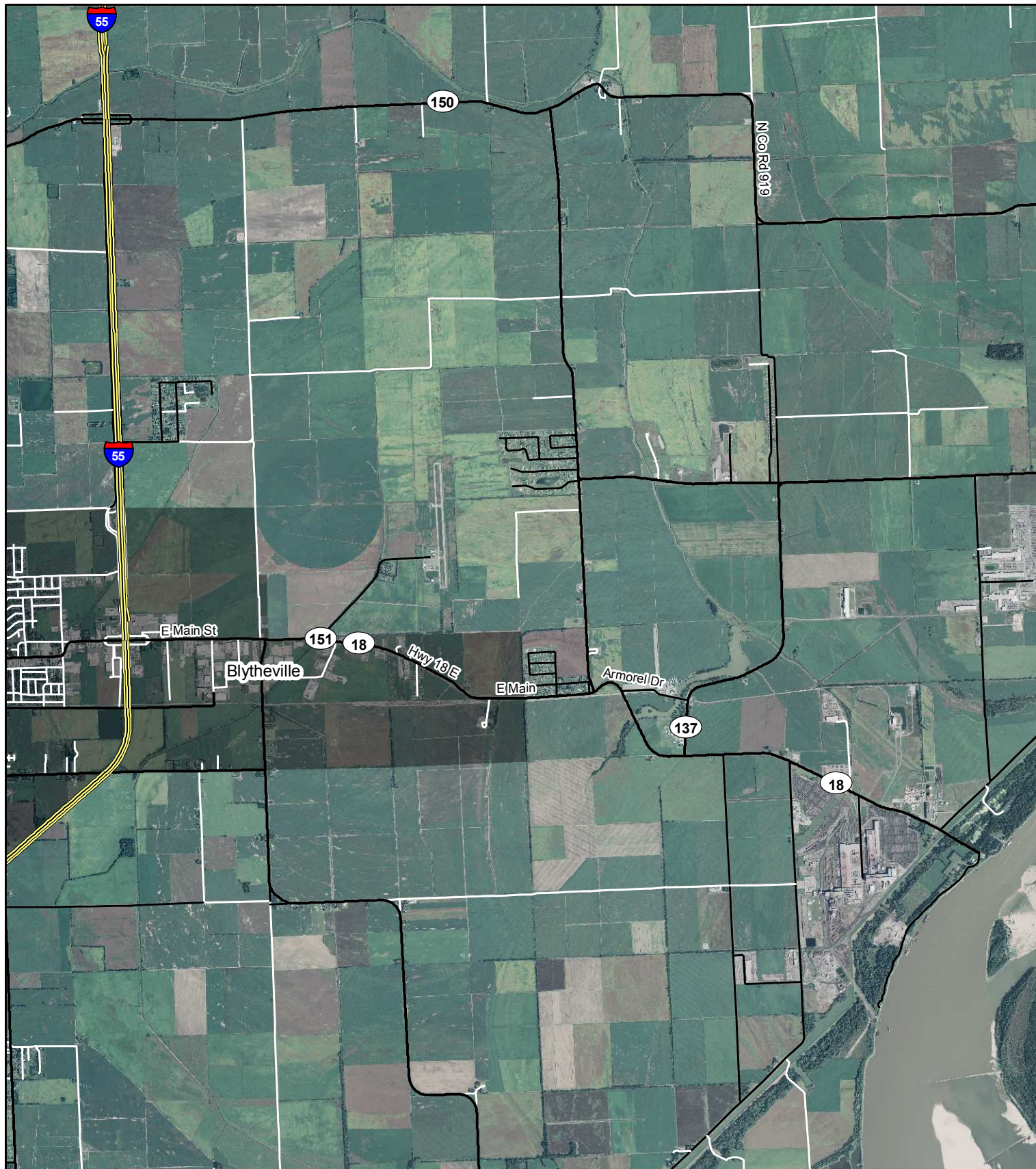
Hwy 18 E

E Main

Armorel Dr

137

I-55

18

0 0.5 1 2 3 4
Miles

N
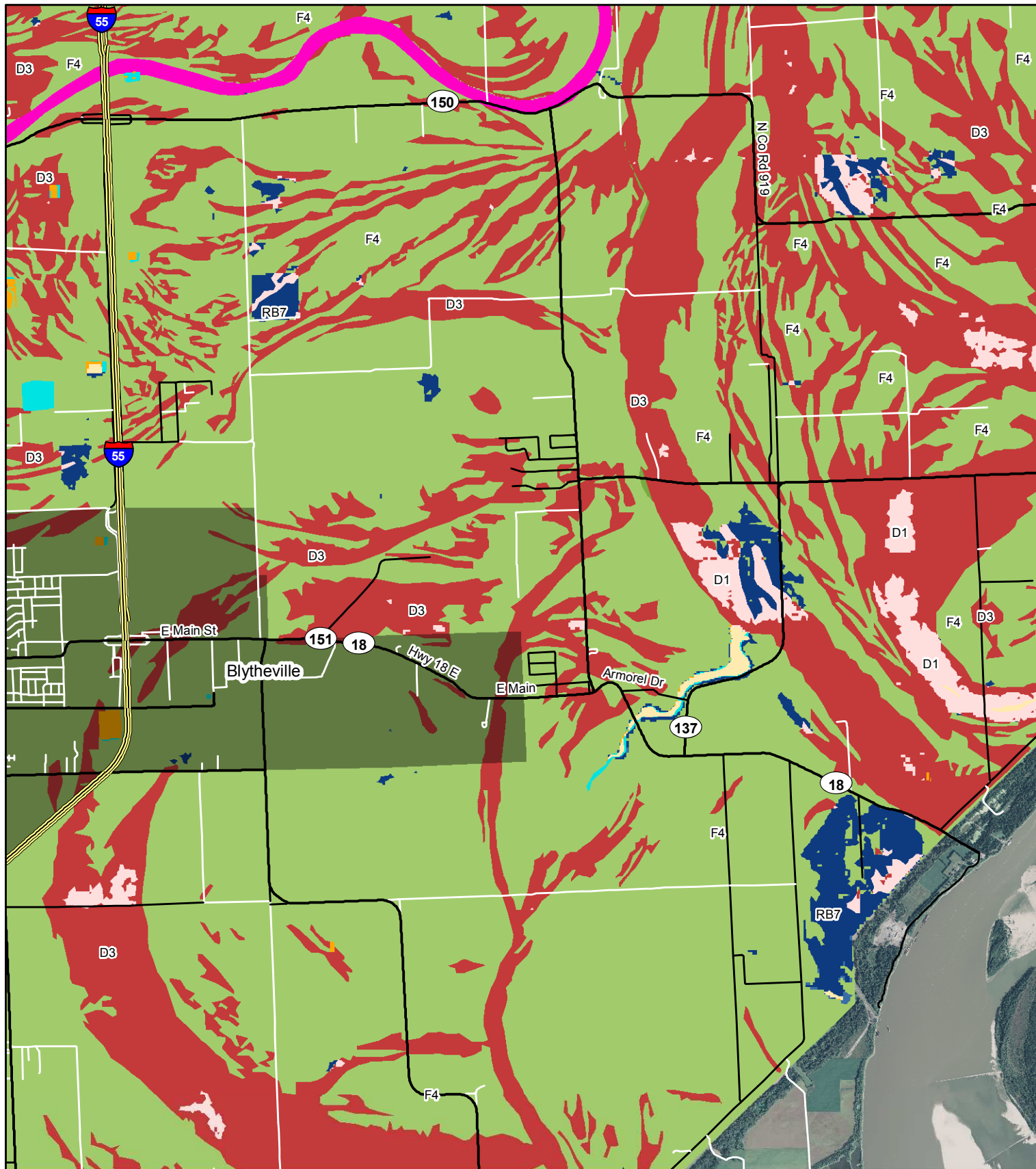
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Projection: Transverse Mercator
Datum: North American 1983

E18

Coordinate System: NAD 1983 UTM Zone 15N
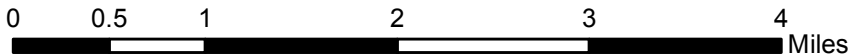Projection: Transverse Mercator
Datum: North American 1983

0   0.5   1   2   3   4
Miles

N

N Co Rd 1015

0   0.5   1   2   3   4
Miles

E19

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

D3

150 137

N Co Rd 1015

D3

F4

F4

D3

D1

0   0.5   1   2   3   4
Miles

E19

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

141

141

N Old Greensboro Rd

E Johnson Ave

Johnson Ave

351

49

63 Bus

63 Bus

W Johnson Ave

63 Bus

63 Bus

49 Bus

Airport Rd

N Church St

S Main St

E Nettleton Ave

351

E Highland Dr

Jonesboro

63 Bus

226

18

Southwest Dr

Harrisburg Rd

49

141

S Culberhouse Rd

Culberhouse St

63

Joe N Martin Expy

Stadium Blvd

Joe N Martin Expy

Co Rd 634

63

463

Bus

1

163

0   0.5   1   2   3   4
Miles

F12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

F12

Coordinate System: NAD 1983 UTM Zone 15N
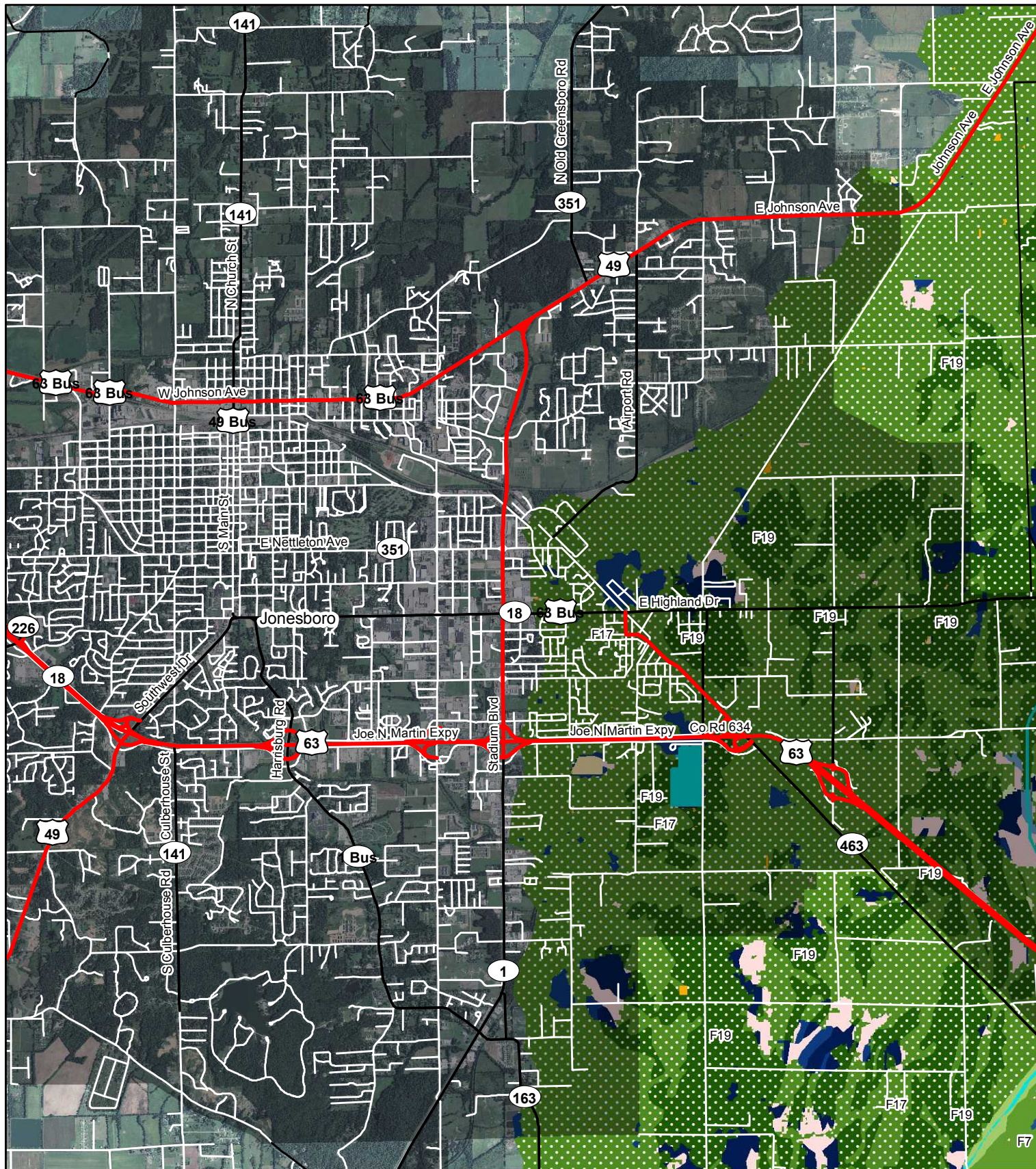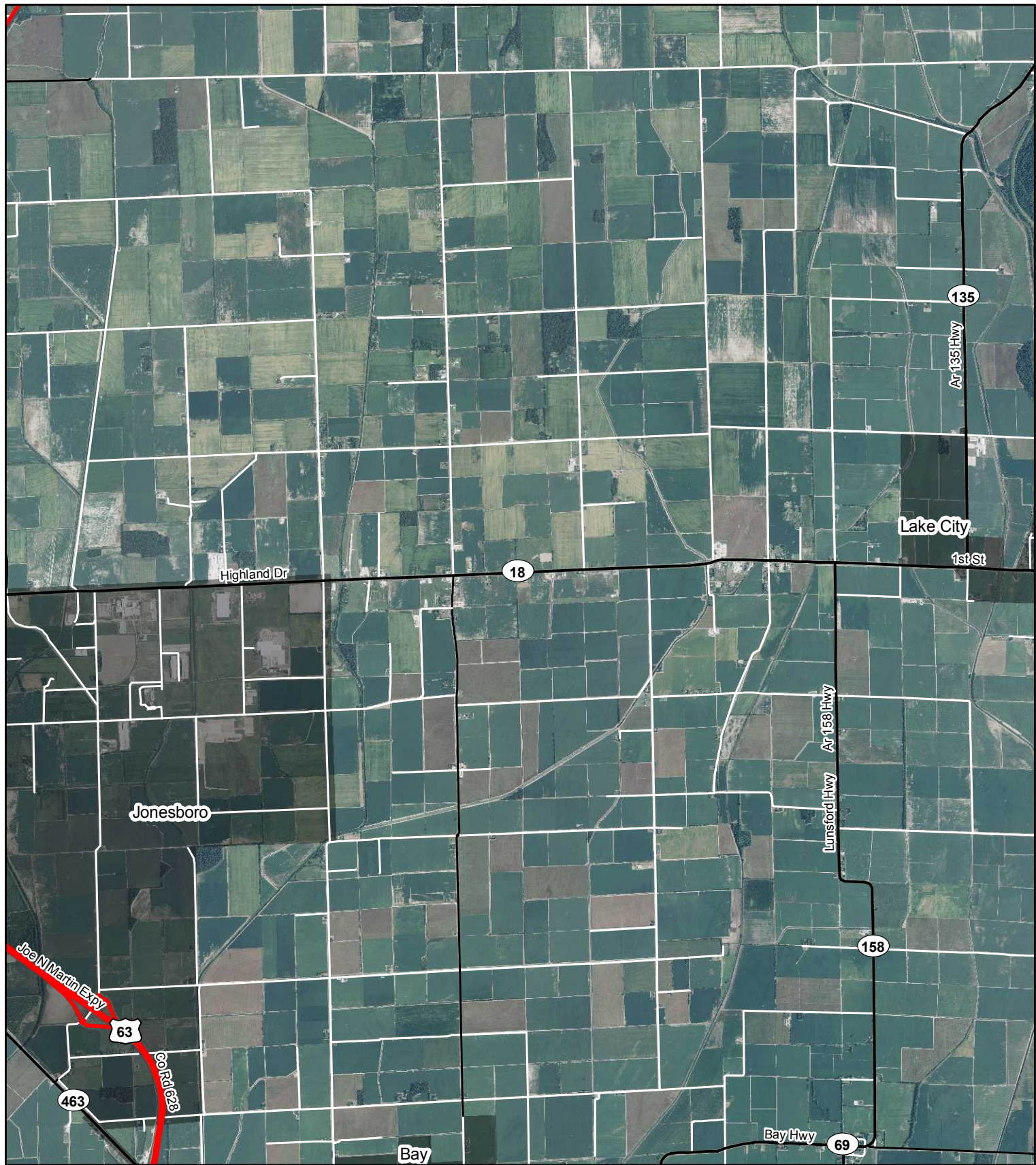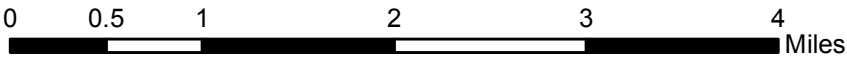Projection: Transverse Mercator
Datum: North American 1983

N

0   0.5   1   2   3   4
Miles

141
141
63 Bus
63 Bus
63 Bus
63 Bus
49 Bus
W Johnson Ave
N Church St
N Old Greensboro Rd
351
49
E Johnson Ave
E Johnson Ave
Johnson Ave
F19
Airport Rd
E Nettleton Ave
S Main St
351
F19
226
Jonesboro
18
18 63 Bus
E Highland Dr
F19
F17
F19
F19
F19
49
141
Southwest Dr
Harrisburg Rd
S Culberhouse Rd
Culberhouse St
63
Joe N Martin Expy
Stadium Blvd
Joe N Martin Expy
Co Rd 634
F19
F17
63
463
F19
Bus
1
F19
F19
F17
F19
163
F7

135

Lake City

1st St

Highland Dr

18

Ar 135 Hwy

Ar 158 Hwy

Lunsford Hwy

Jonesboro

158

Joe N Martin Expy

63

Co Rd 628

463

Bay Hwy

69

Bay

0   0.5   1   2   3   4
Miles

F13

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

F13

Coordinate System: NAD 1983 UTM Zone 15N
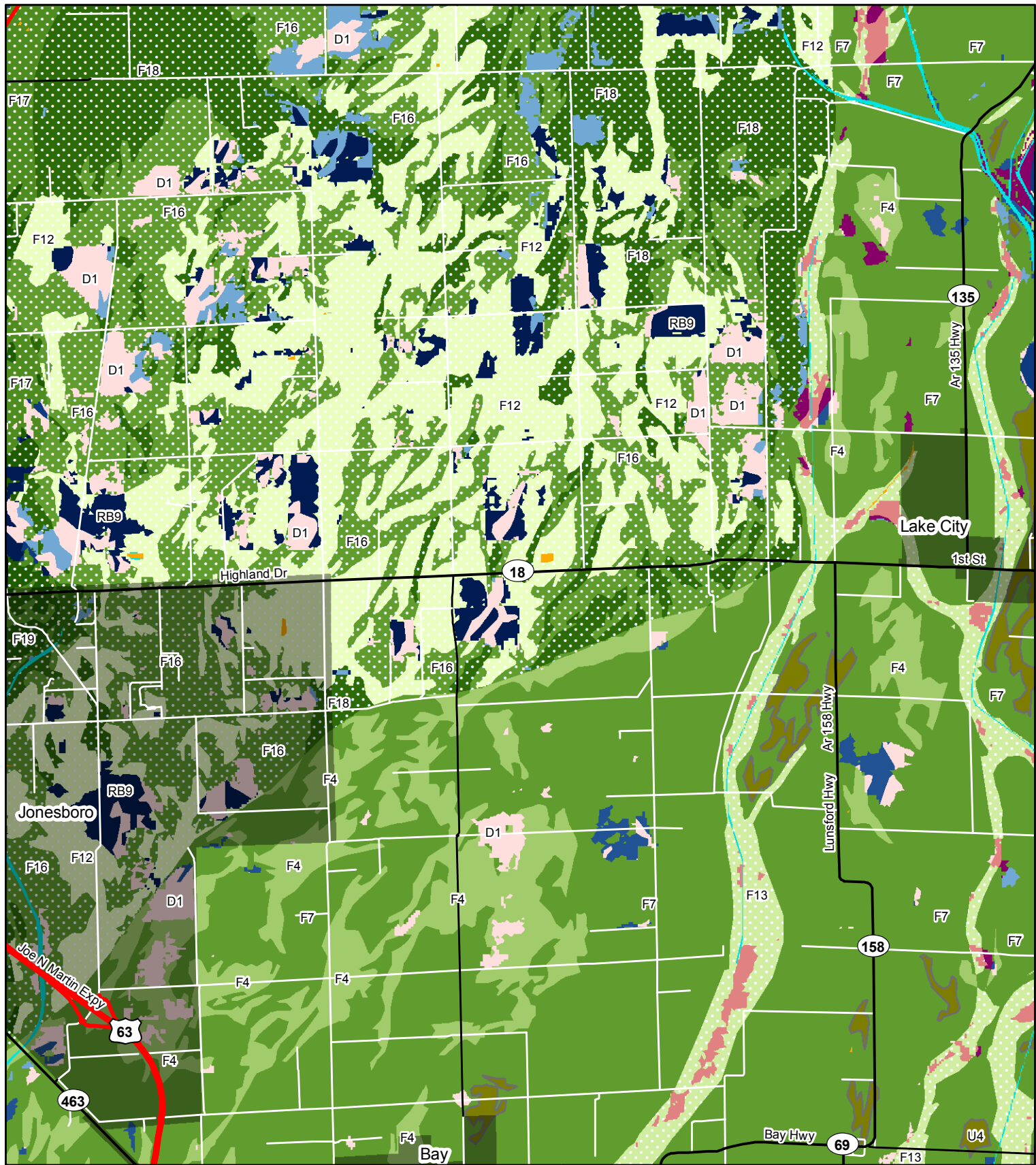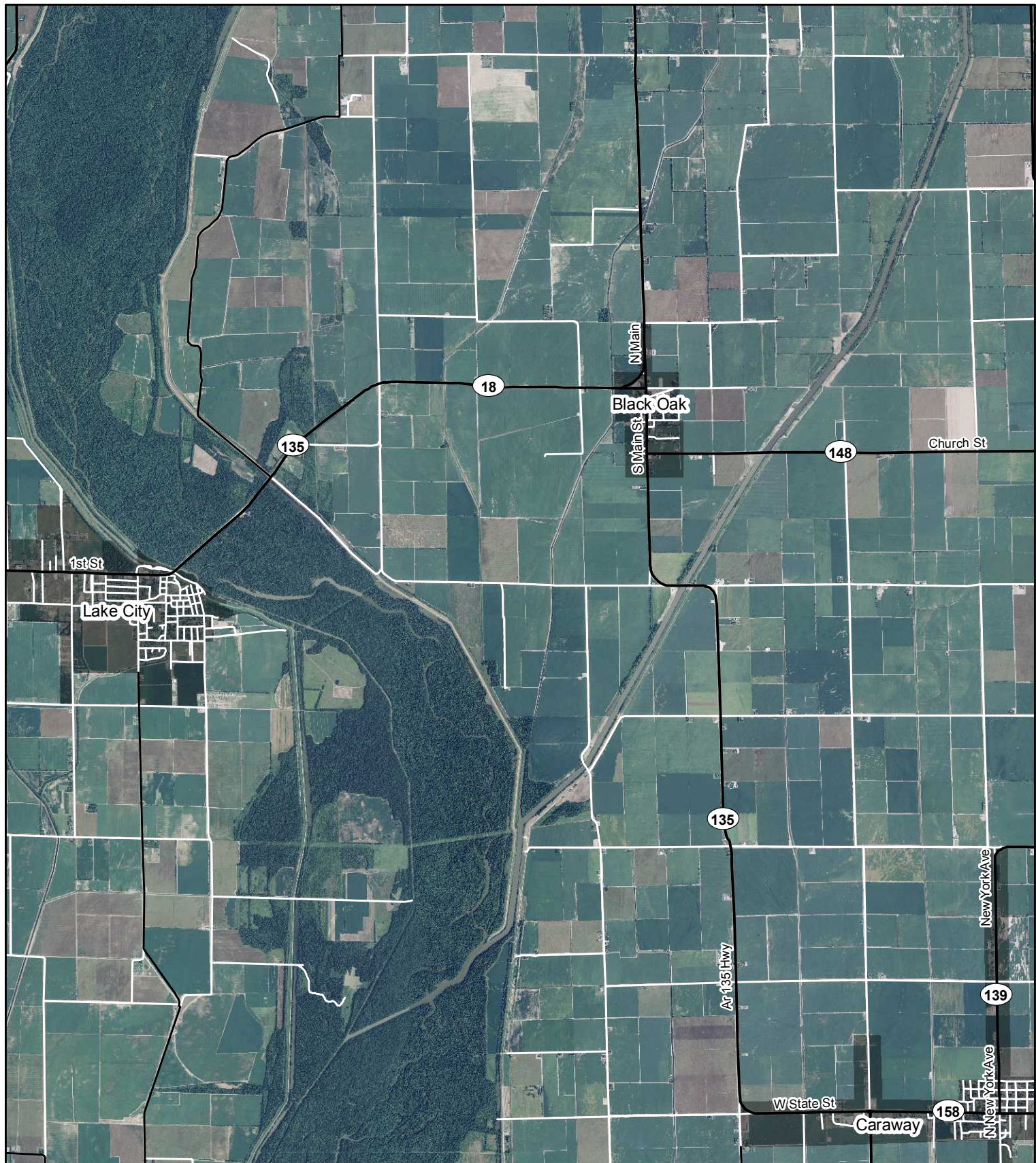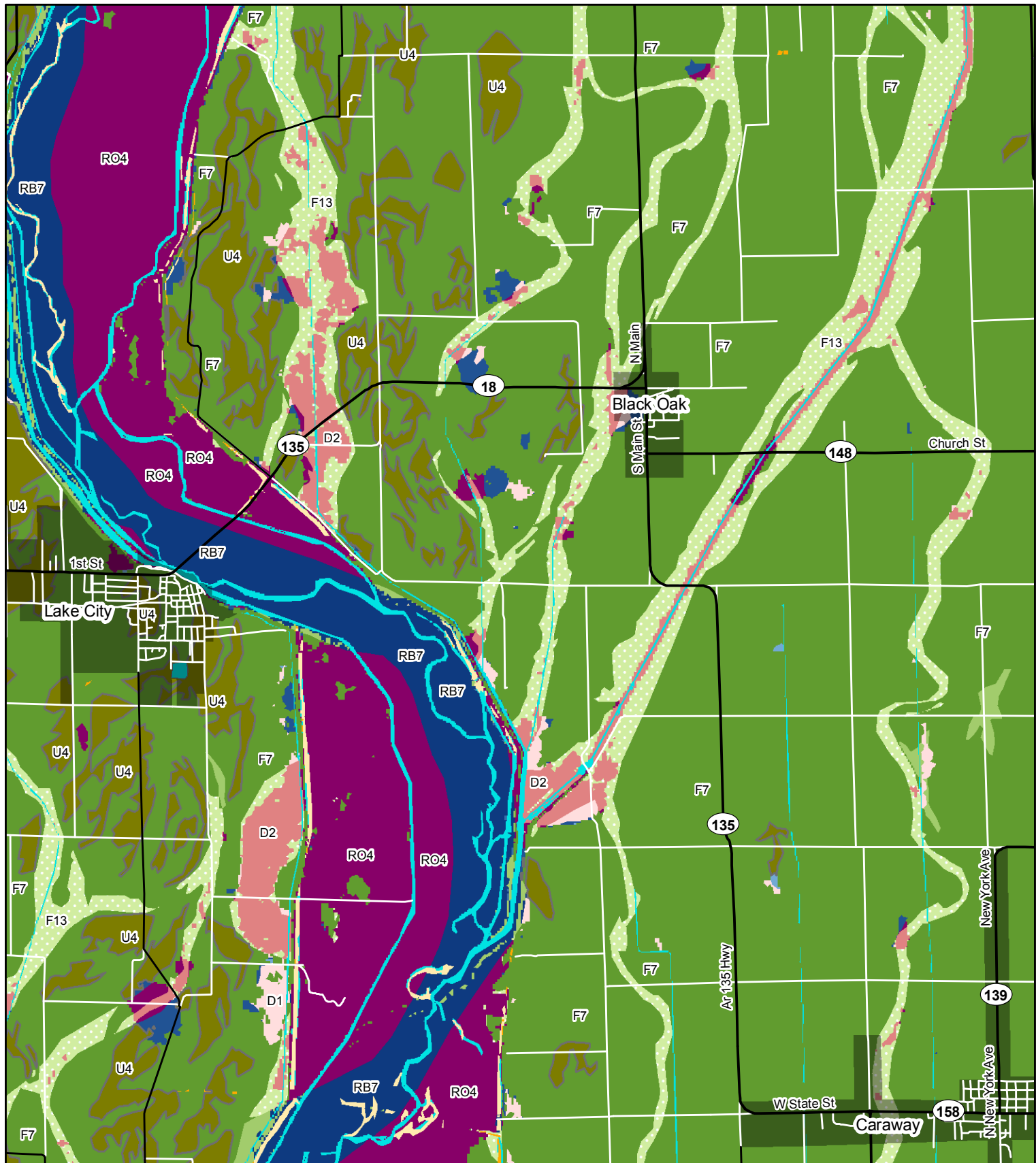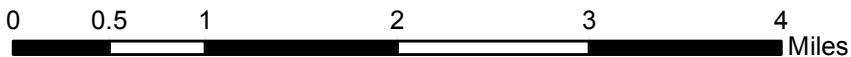Projection: Transverse Mercator
Datum: North American 1983

F17
F18
F16
D1
F16
F18
F18
F7
F12
F7
F7
F7
F16
F16
F4
F12
D1
D1
F18
F135
F17
F16
D1
F12
F12
RB9
D1
F7
RB9
F12
D1
D1
F4
F16
D1
F16
F12
F16
Lake City
Highland Dr
18
1st St
F19
F16
F16
F4
F16
F18
F4
F16
F4
D1
F7
RB9
Jonesboro
F13
F4
F12
F16
D1
F4
F7
F4
F7
158
F7
Joe N Martin Expy
F4
F4
F4
63
F4
Bay Hwy
69
U4
463
F4
Bay
F13

0   0.5   1   2   3   4
                                    Miles

N

N Main

18

Black Oak

135

S Main St

148

Church St

1st St

Lake City

135

Ar 135 Hwy

New York Ave

139
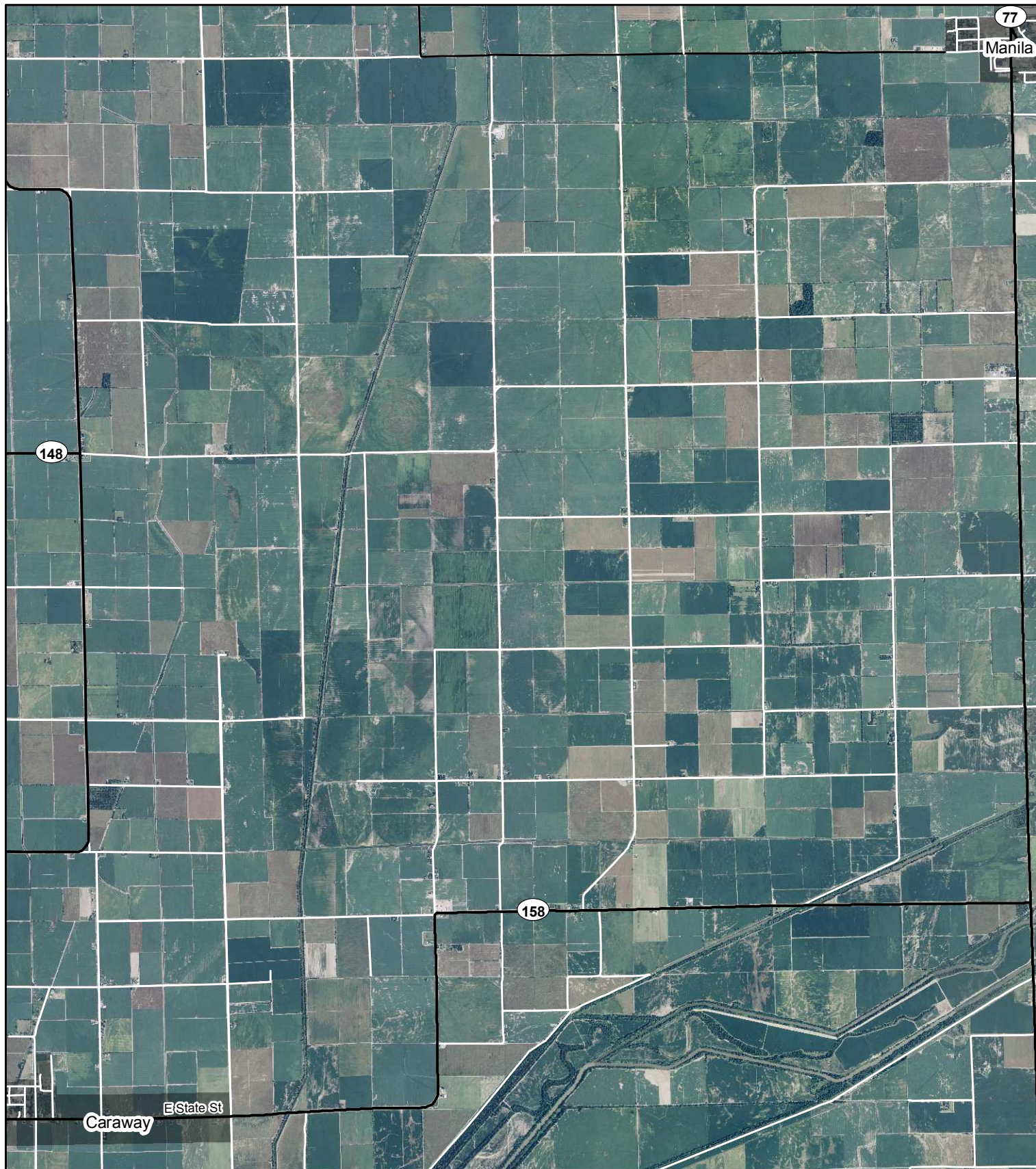
W State St

Caraway

158

N New York Ave

0   0.5   1   2   3   4
Miles

F14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
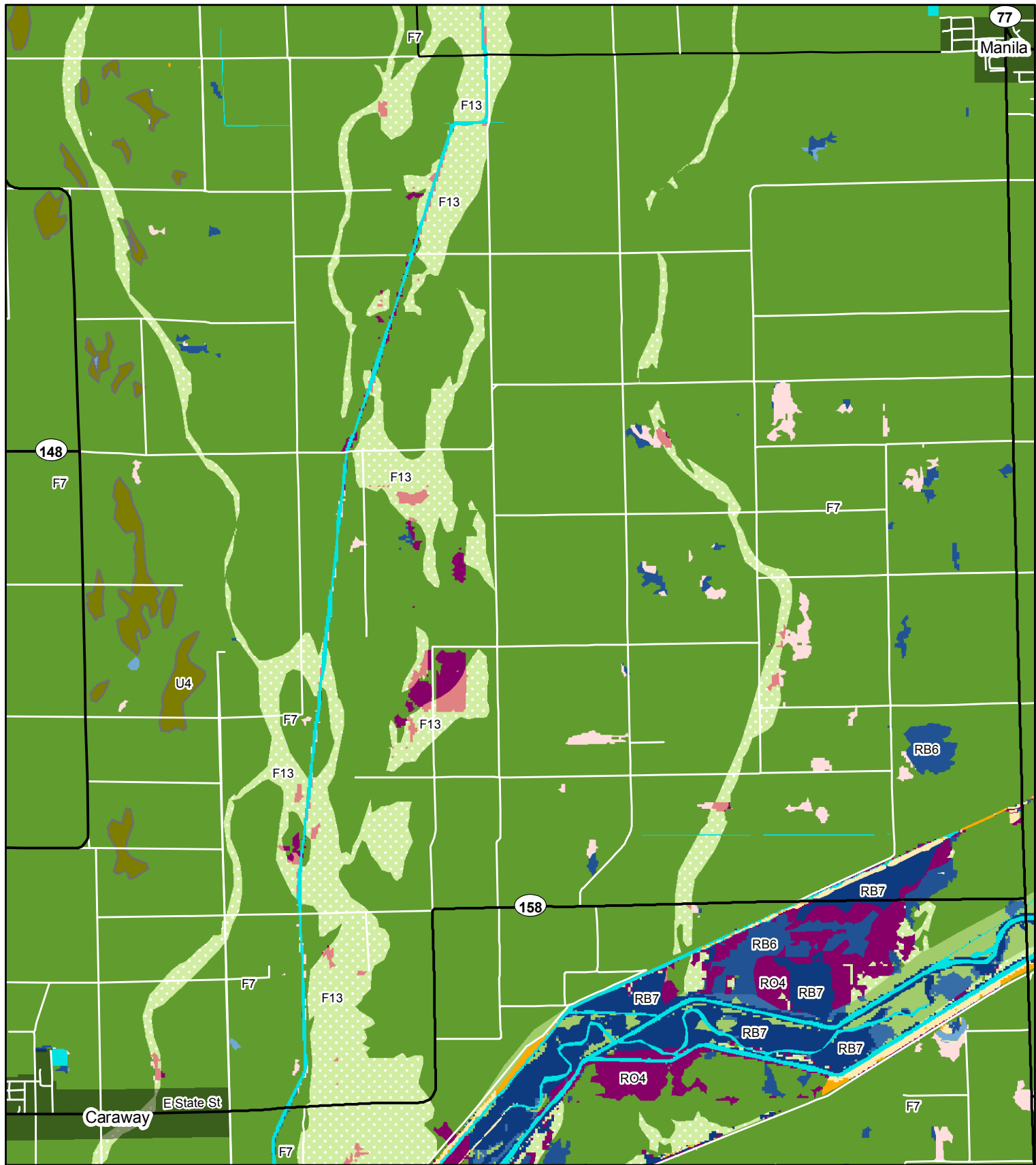Datum: North American 1983

N

RO4

RB7

F7

U4

F13

F7

F7

F7

F7

F7

U4

U4

F7

U4

RO4

RO4

RO4

D2

135

RB7

1st St

Lake City

U4

U4

U4

U4

U4

F7

F13

U4

U4

D1

RB7

RB7

D2

RO4

RO4

RB7

RO4

18

N Main

S Main St

Black Oak

148

Church St

F7

F13

F7

F7

D2

F7

F7

135

Ar 135 Hwy

F7

F7

New York Ave

139

W State St

Caraway

158

N New York Ave

0	0.5	1	2	3	4

Miles

F14

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

77
Manila

148

158

Caraway   E State St

0   0.5   1   2   3   4
Miles

F15

N

Coordinate System: NAD 1983 UTM Zone 15N
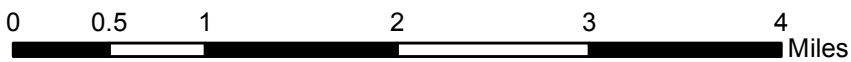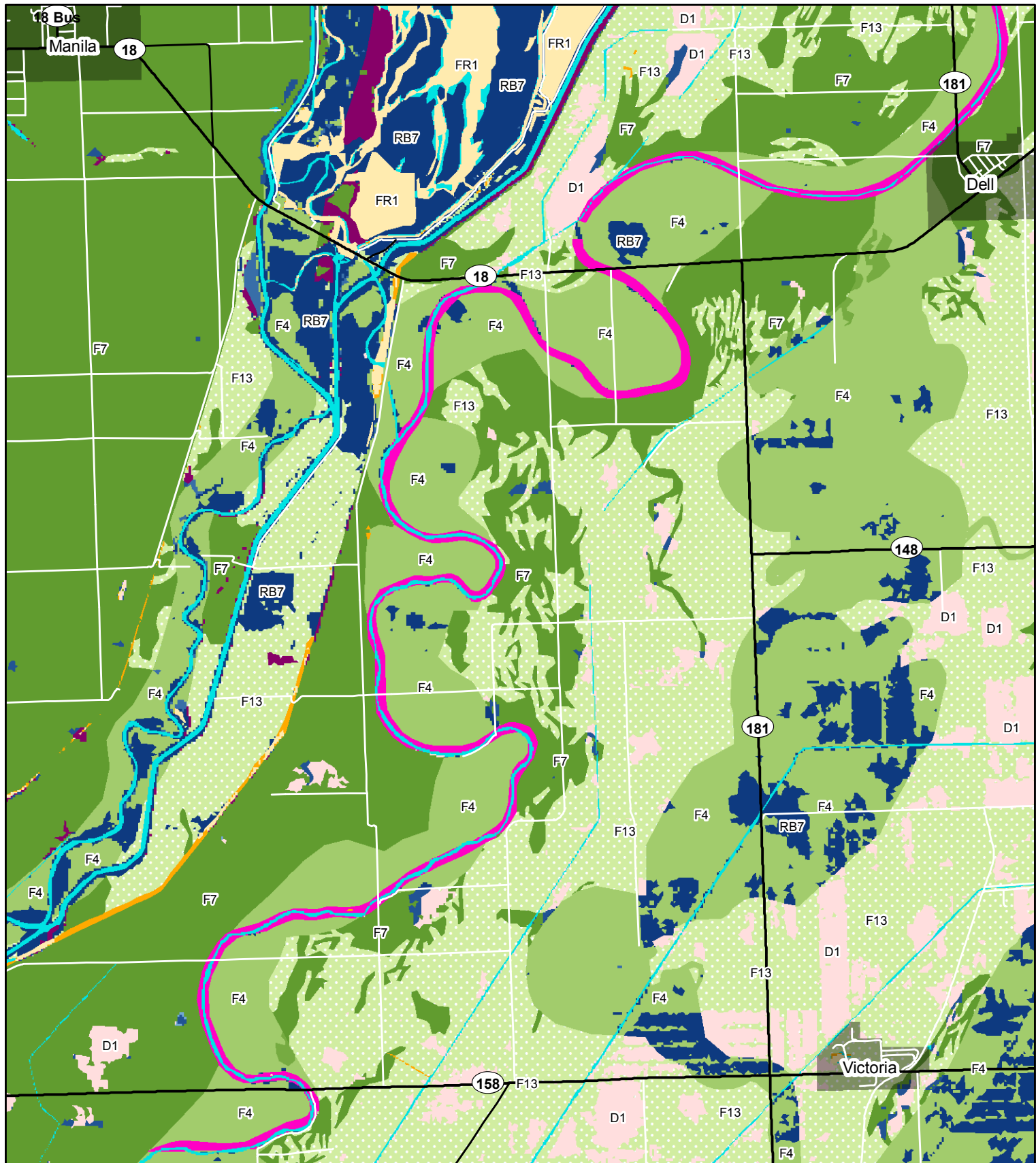Projection: Transverse Mercator
Datum: North American 1983

F7

F13

F13

F7

77
Manila

F13

148
F7

U4

F7

F13

F13

RB6

F7

F13

158

RB7

RB6

RO4
RB7

RB7
RB7

RB7

F7

RO4

F13

F7

E State St

Caraway

F7

0   0.5   1   2   3   4
Miles

F15

N

Coordinate System: NAD 1983 UTM Zone 15N
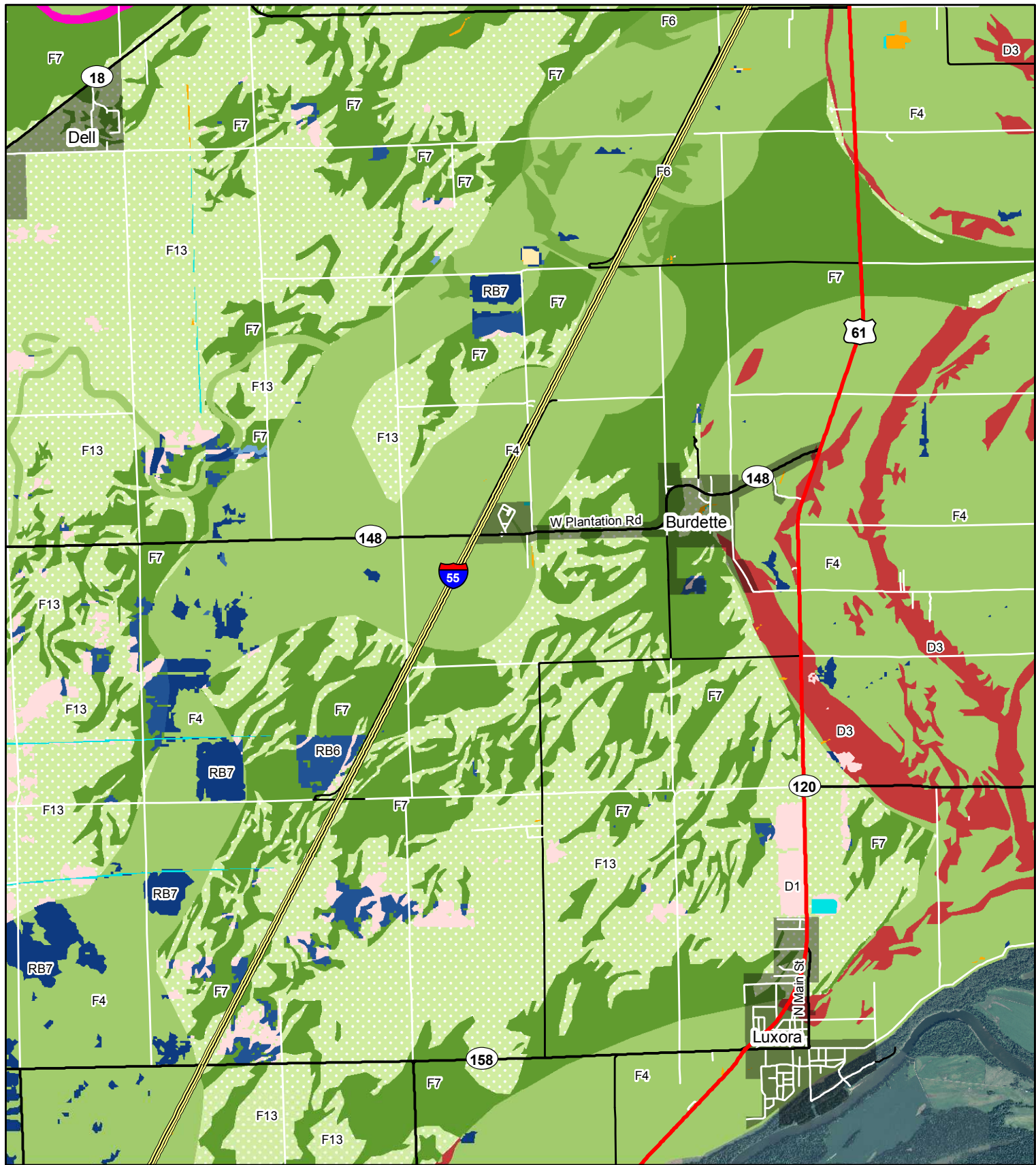Projection: Transverse Mercator
Datum: North American 1983

18 Bus

Manila

18

18

181

Dell

148

181
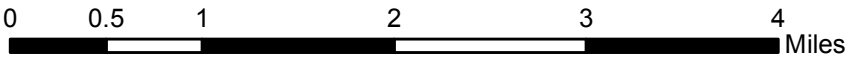
158

Victoria

0   0.5   1   2   3   4
                                        Miles

F16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Manila
18 Bus
18
181
Dell
FR1
FR1
RB7
RB7
FR1
D1
F13
F13
F7
F7
F4
F7
D1
F4
RB7
F4
18
F13
F4
F4
F13
F4
F7
F13
F4
F4
F7
F4
F7
RB7
F7
F4
F4
F4
F4
F7
F13
F4
F13
F7
F13
148
F13
D1
D1
F4
D1
181
RB7
F4
F4
F7
F13
F13
D1
F4
F13
D1
D1
Victoria
F4
158
F13
F4
D1
F13
F4
F4

0   0.5   1   2   3   4
Miles

F16

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
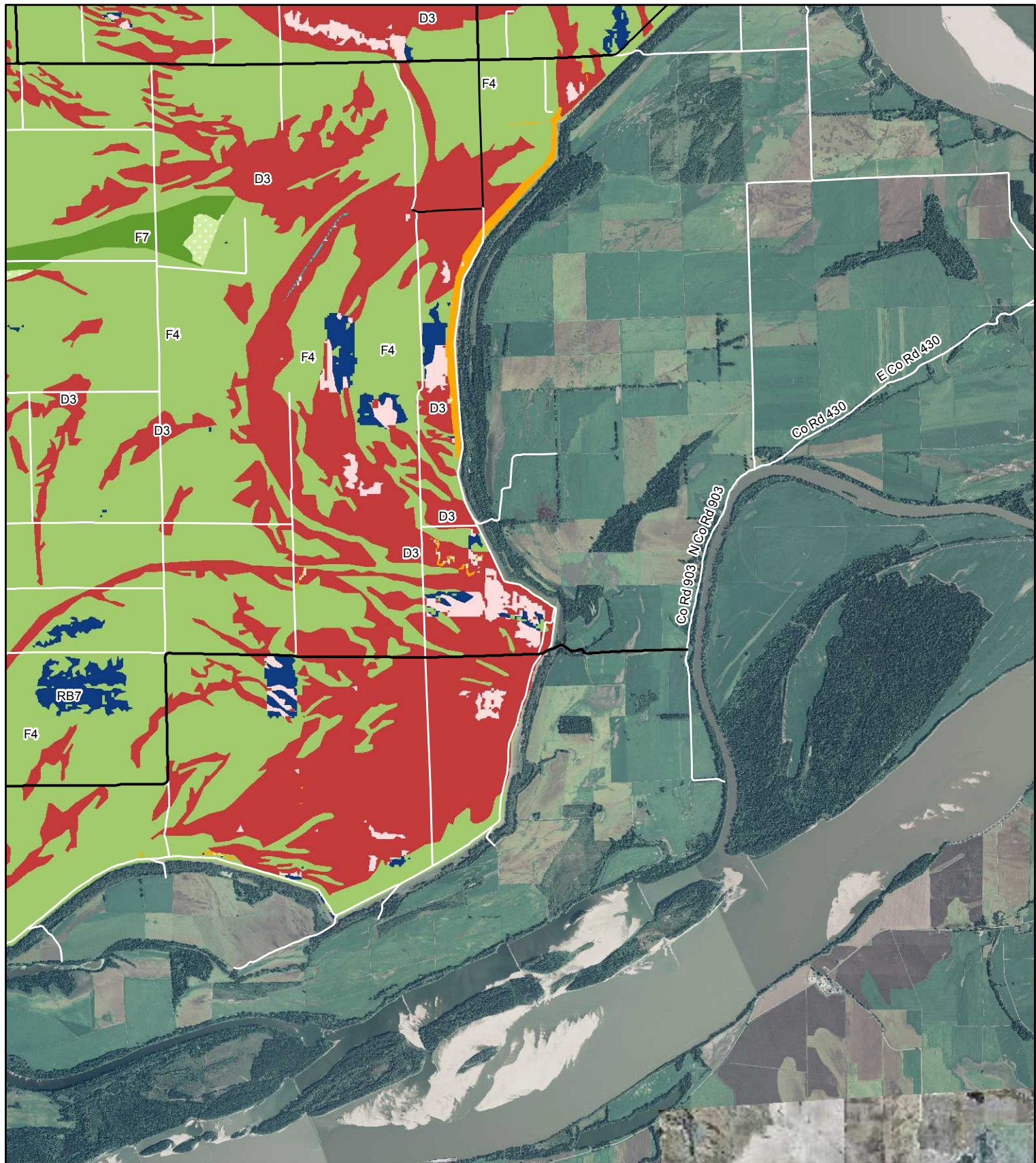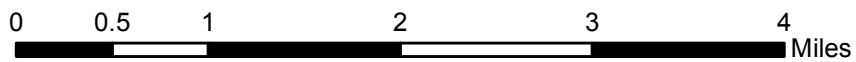Datum: North American 1983

18

Dell

148

148

61

W Plantation Rd   Burdette

I-55

120

158

N Main St

Luxora

0   0.5   1   2   3   4
Miles

F17

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

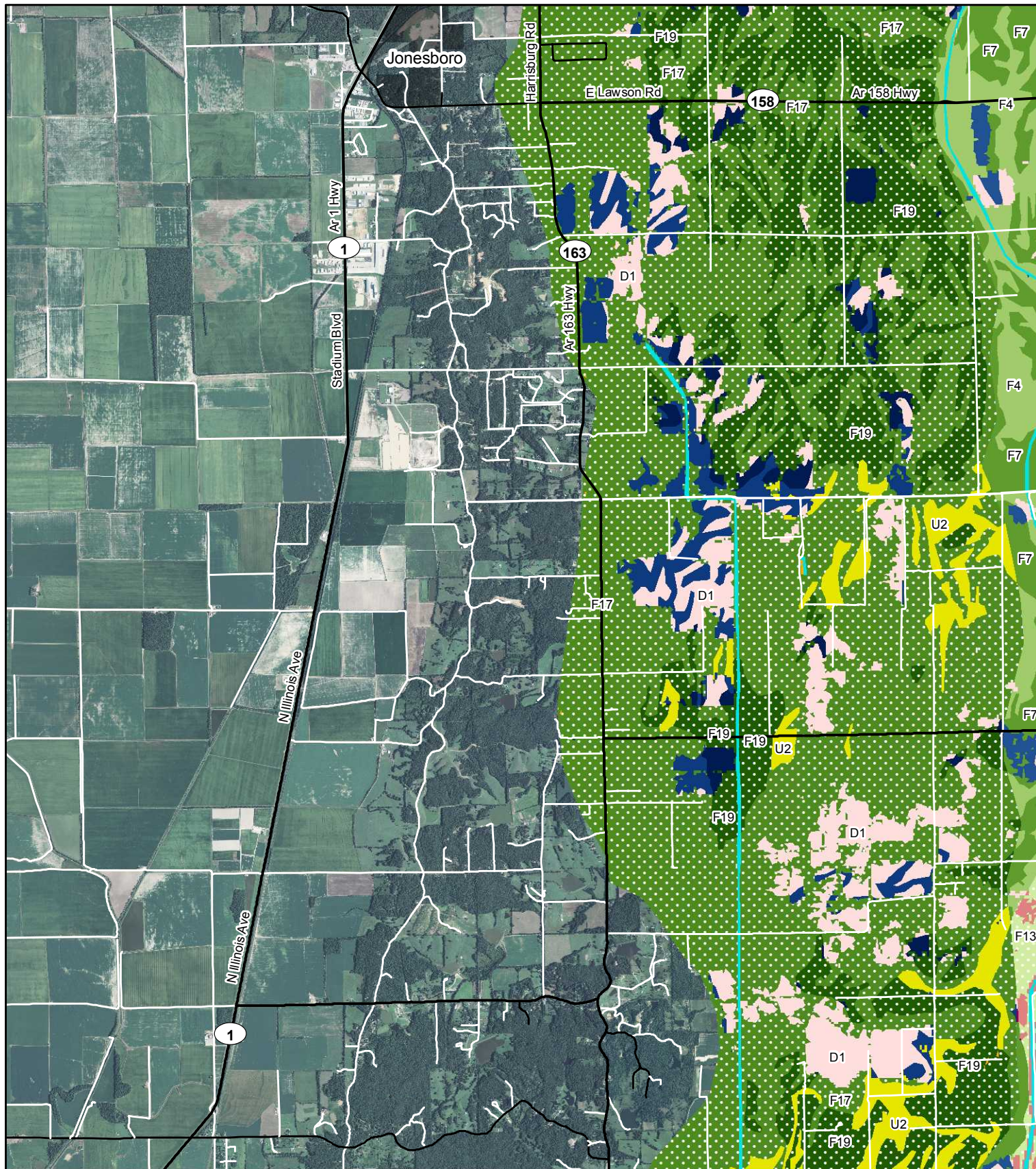Dell

F7

18

F7

F7

F7

F7

F7

F6

F13

F13

RB7

F7

F7

F13

F7

F13

F4

F6

F7

61

148

Burdette

W Plantation Rd

148

F4

F4

F4

D3

F7

F4

F4

148

55

F7

F13

F4

RB6

RB7

F13

F7

D3

D3

120

F13

F7

F7

F4

F7

RB7

D1

F7

RB7

F4

F7

Luxora

N Main St

F7

F13

158

F4

F13

F13

F4

| 0 | 0.5 | 1 | 2 | 3 | 4 |

Miles

N

F17

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

E Co Rd 430

Co Rd 430

N Co Rd 903

Co Rd 903
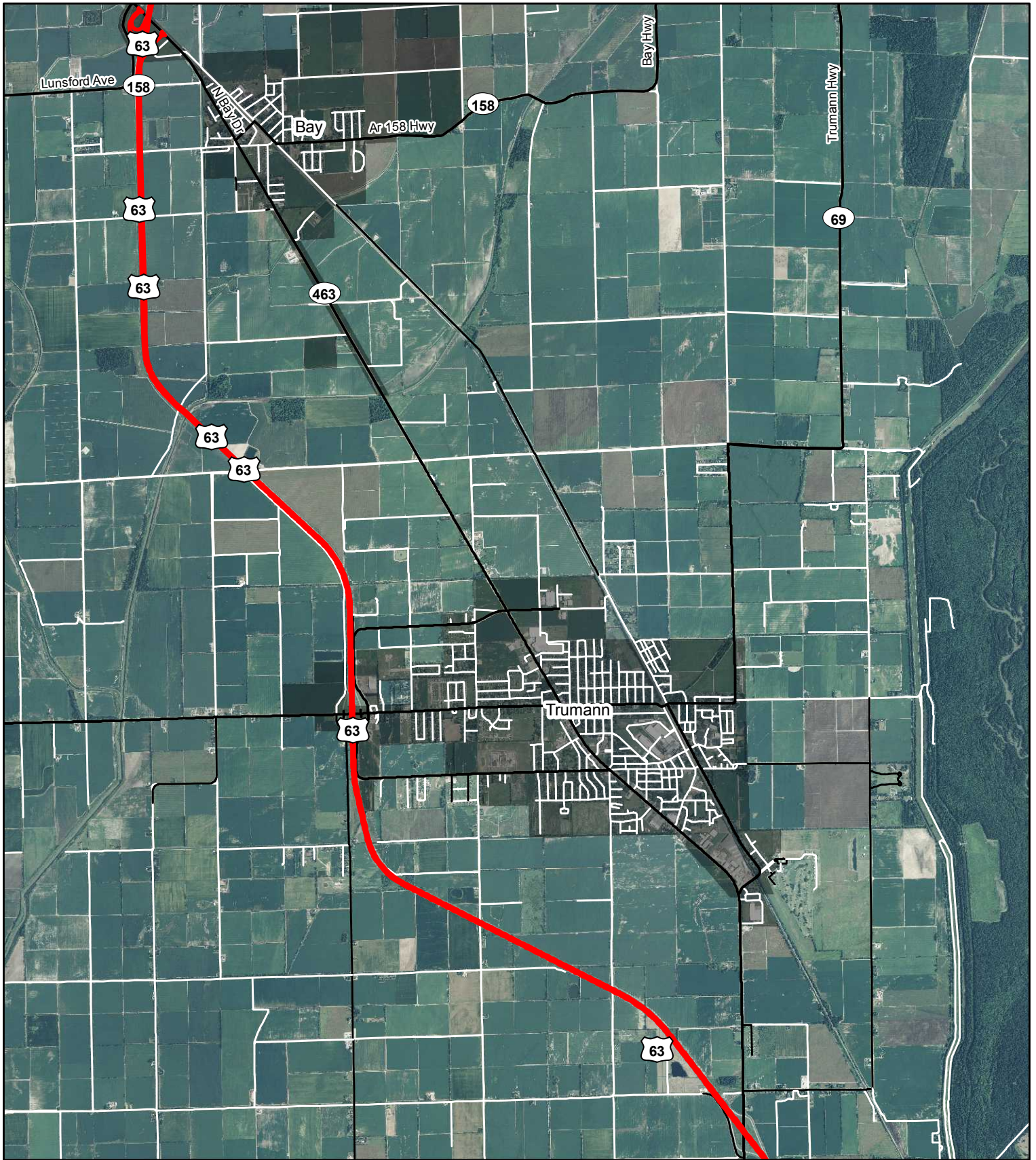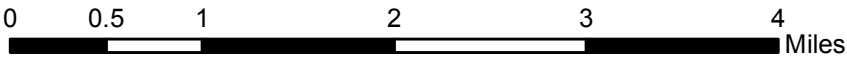
0   0.5   1   2   3   4
Miles

F18

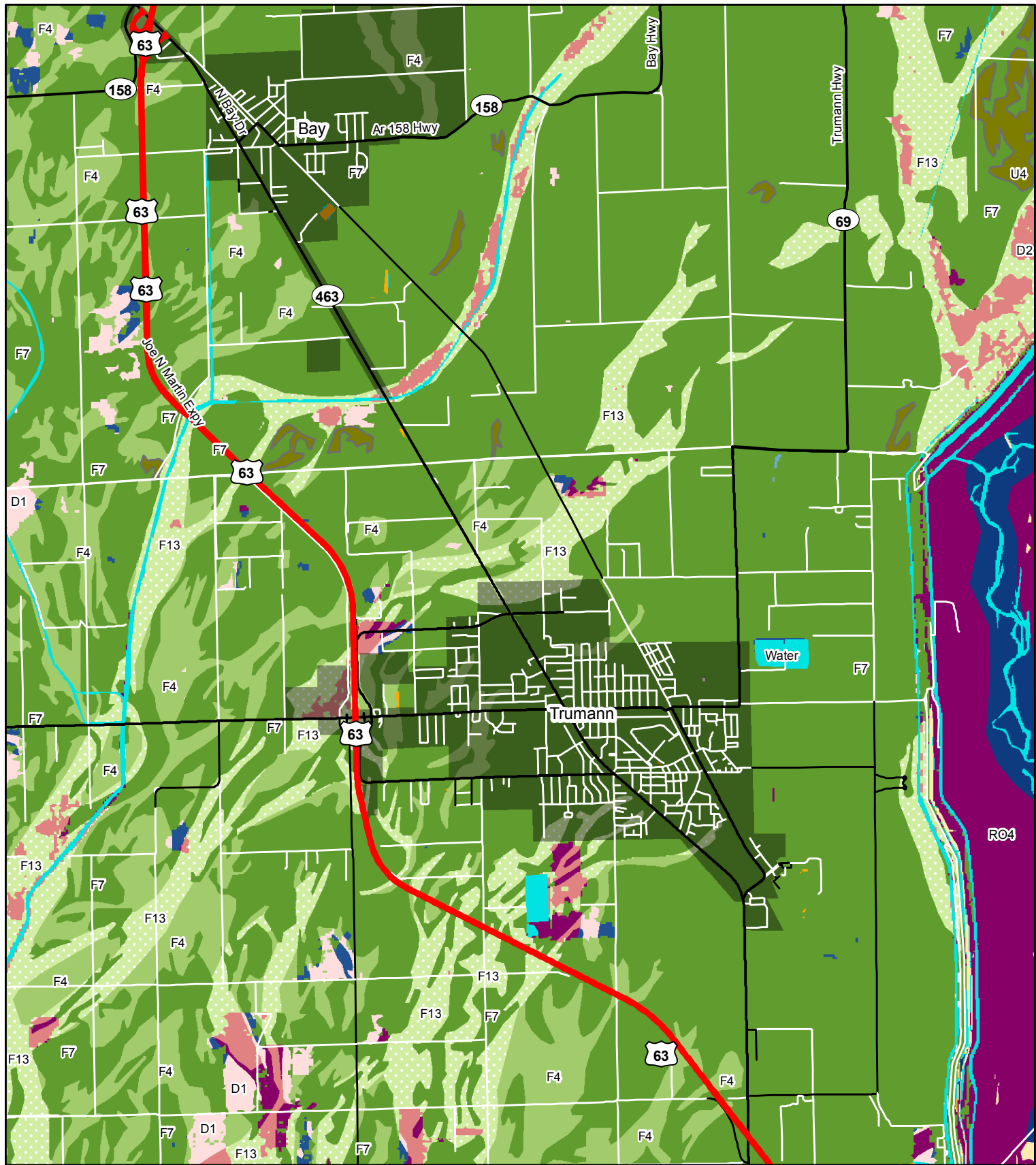Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

0   0.5   1   2   3   4
Miles

F18

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Map labels: D3, F4, F7, RB7, Co Rd 430, E Co Rd 430, Co Rd 903, N Co Rd 903

Jonesboro

Harrisburg Rd

E Lawson Rd

158 Ar 158 Hwy

Ar 1 Hwy

1

163 Ar 163 Hwy

Stadium Blvd

N Illinois Ave

N Illinois Ave
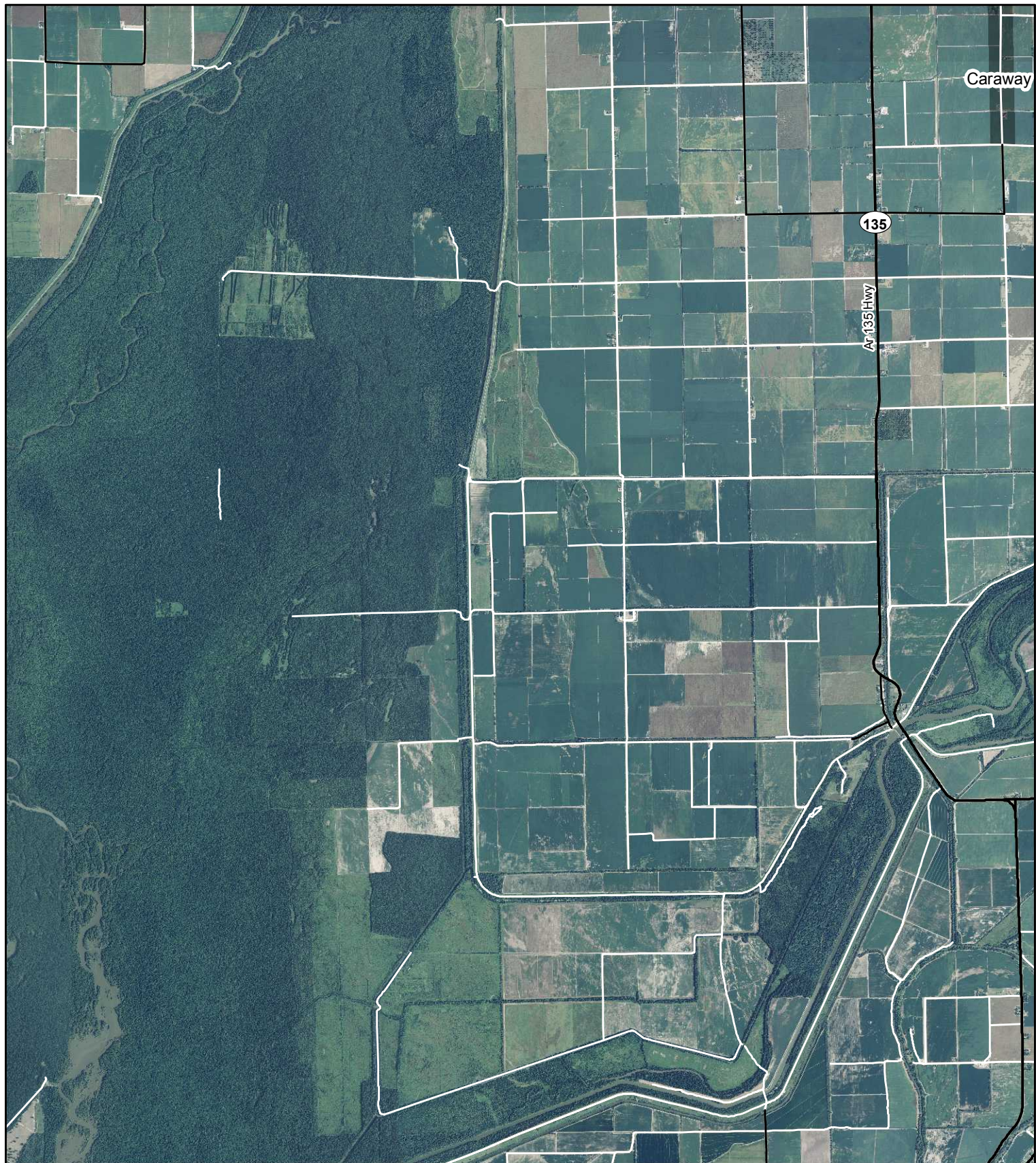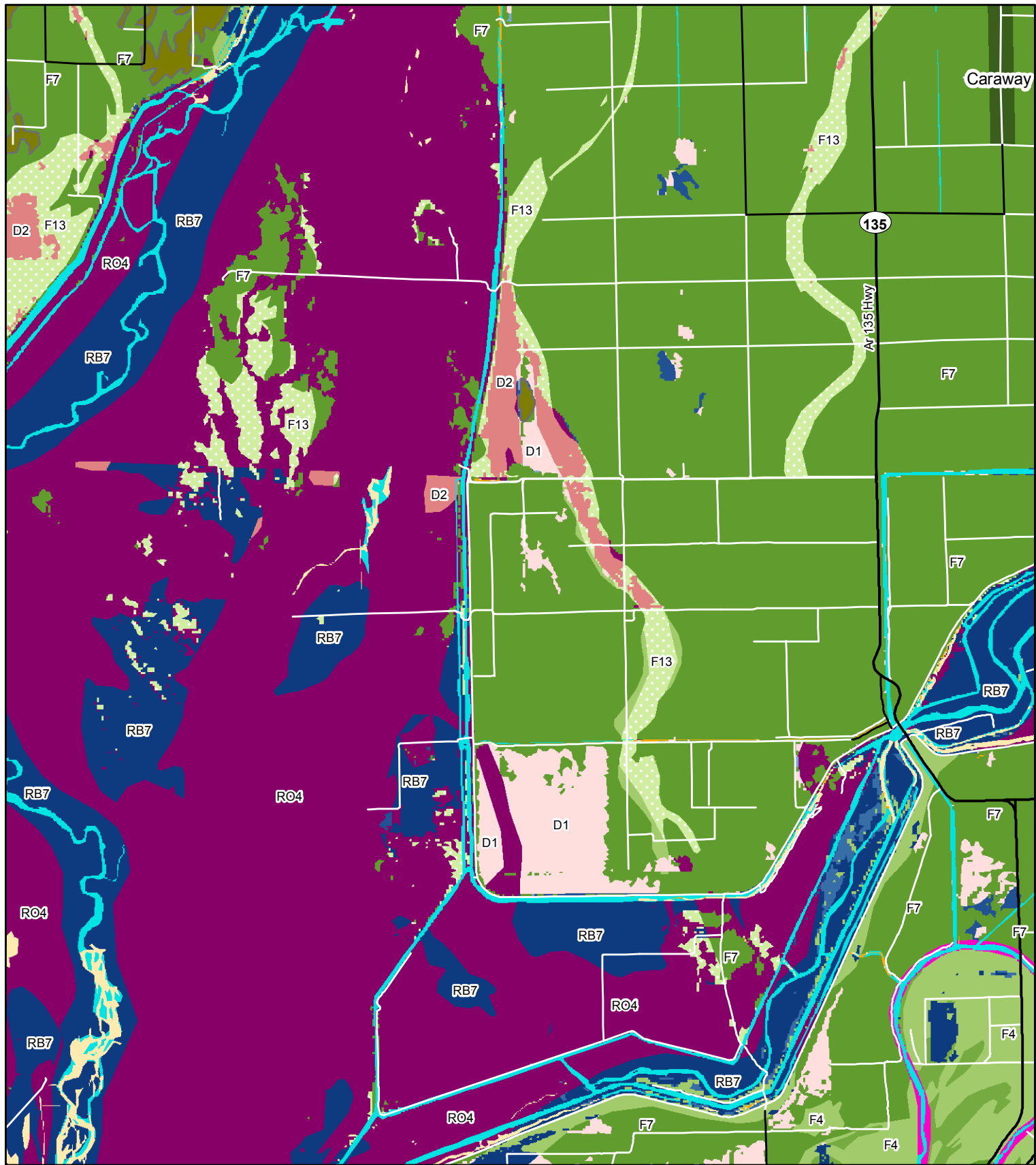
1

1

0   0.5   1   2   3   4
                                      Miles

G12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Jonesboro

Harrisburg Rd

E Lawson Rd

Ar 1 Hwy

Stadium Blvd

N Illinois Ave

N Illinois Ave

Ar 163 Hwy

1

163

158

Ar 158 Hwy

F19

F17

F17

F17

F17

F19

F19

F19

F19

F19

F19

F19

F19

F17

F7

F7

F7

F7

F7

F7

F7

F4

F4

F13

D1

D1

D1

D1

U2

U2

U2

1

1

0   0.5   1   2   3   4

Miles

G12

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

63

158 Lunsford Ave

N Bay Dr

Bay Ar 158 Hwy 158

Bay Hwy

Trumann Hwy

69

63

463

63

63

63

Trumann

63

63

0   0.5   1   2   3   4
Miles

G13

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Bay

Coordinate System: NAD 1983 UTM Zone 15N
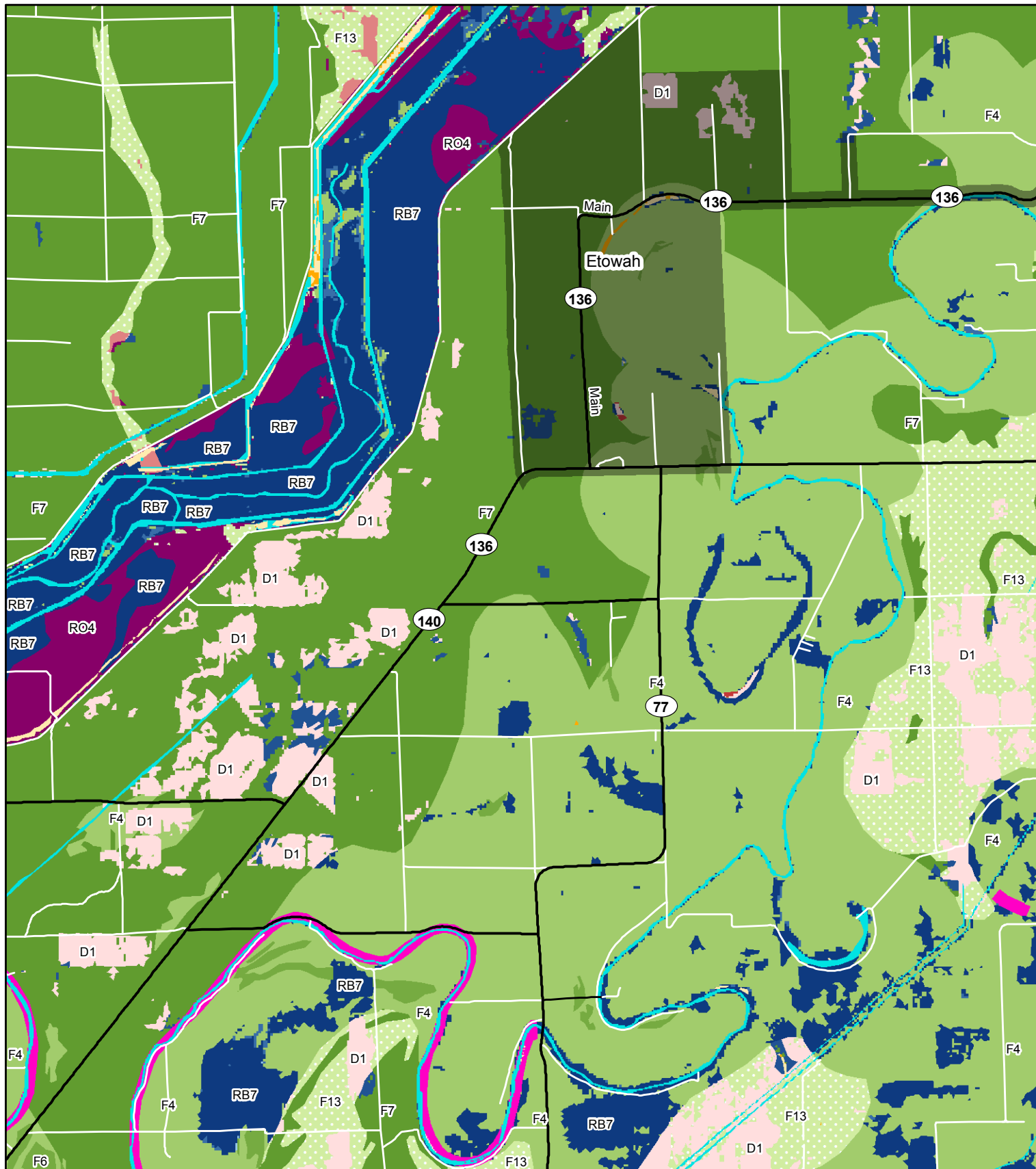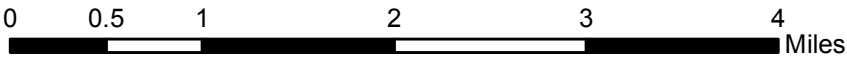Projection: Transverse Mercator
Datum: North American 1983

0   0.5   1   2   3   4
Miles

G13

N

Trumann

Water
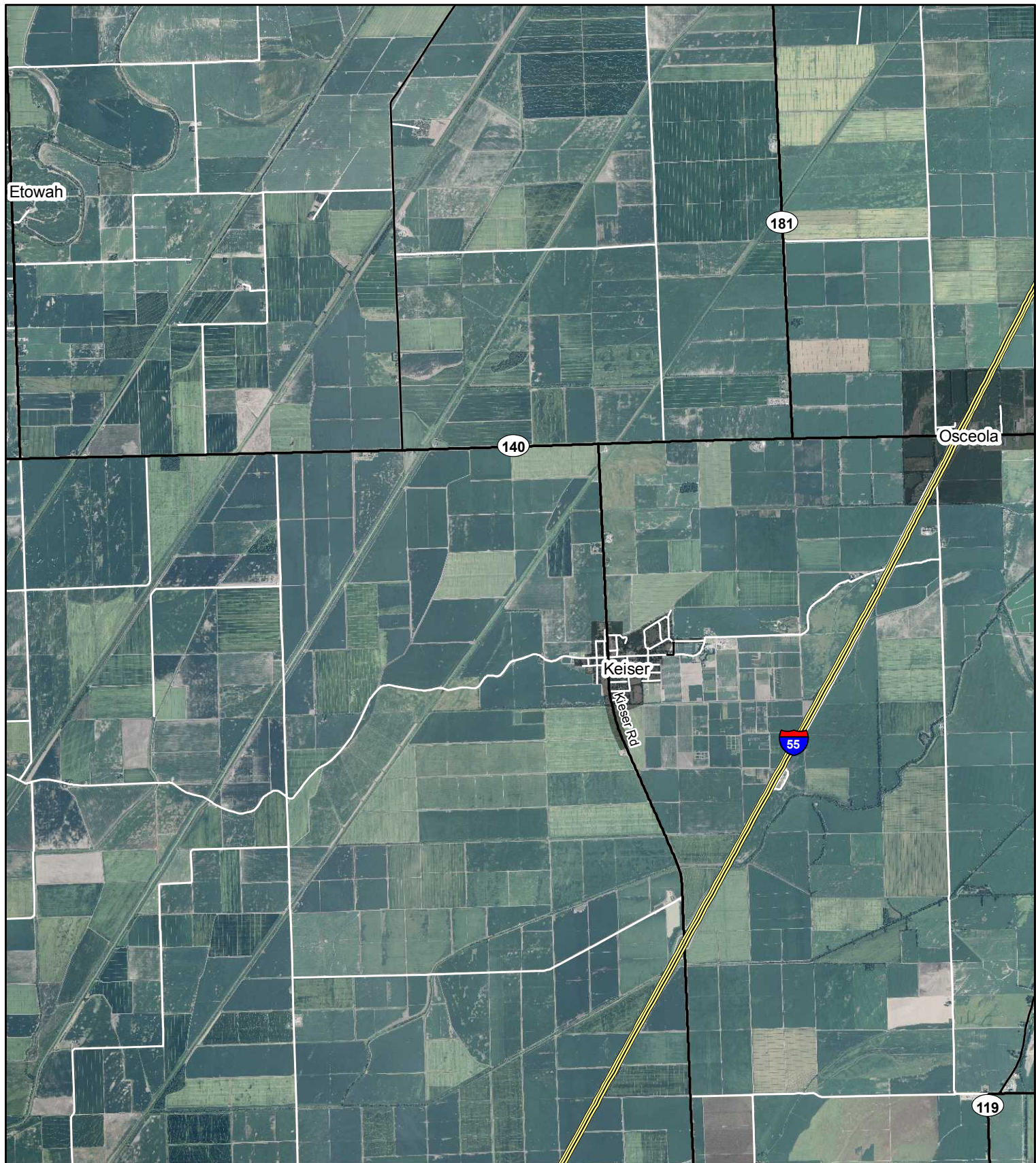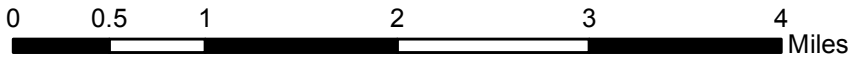
Caraway

135

Ar 135 Hwy

0 0.5 1 2 3 4
Miles

G14

N
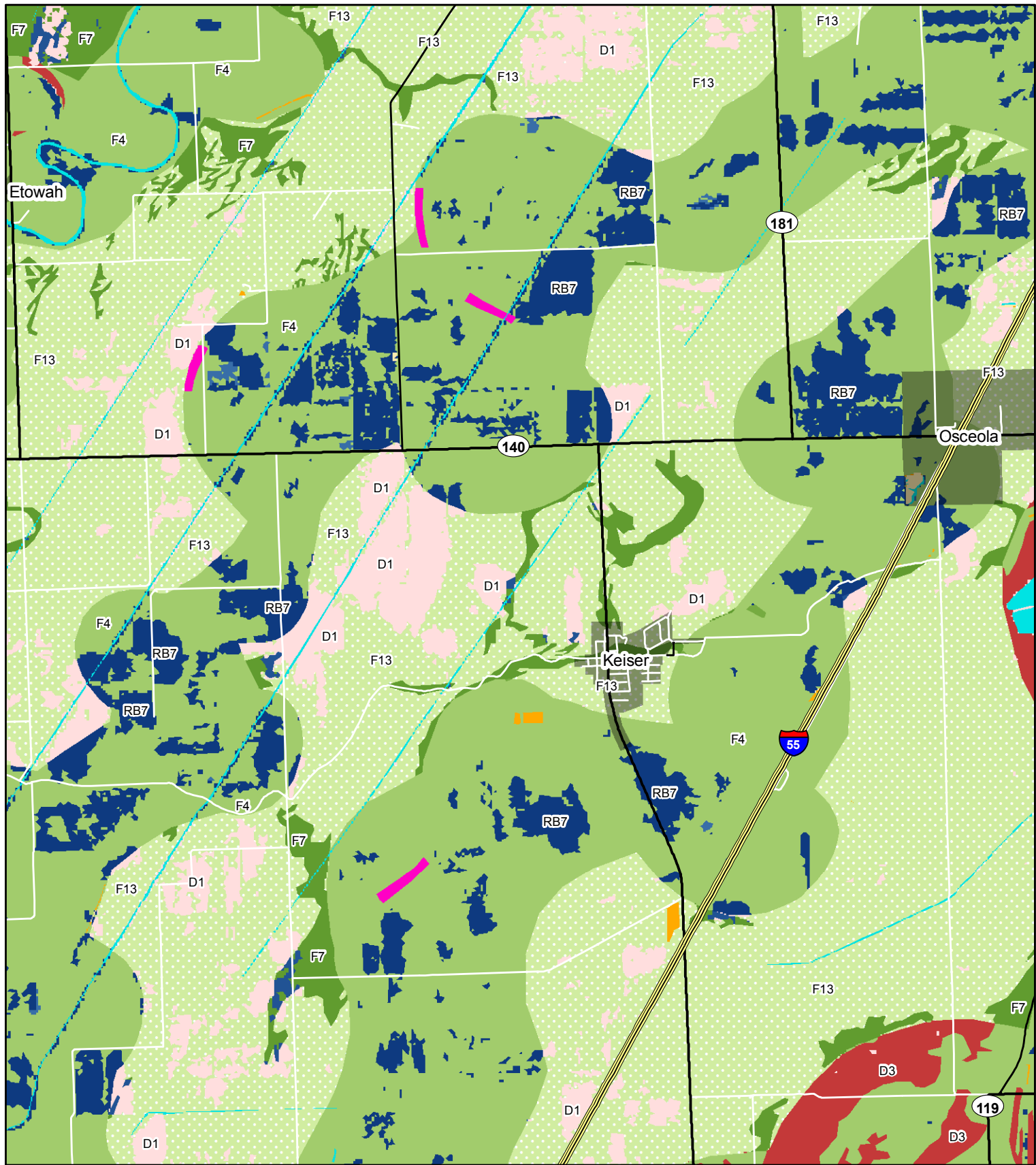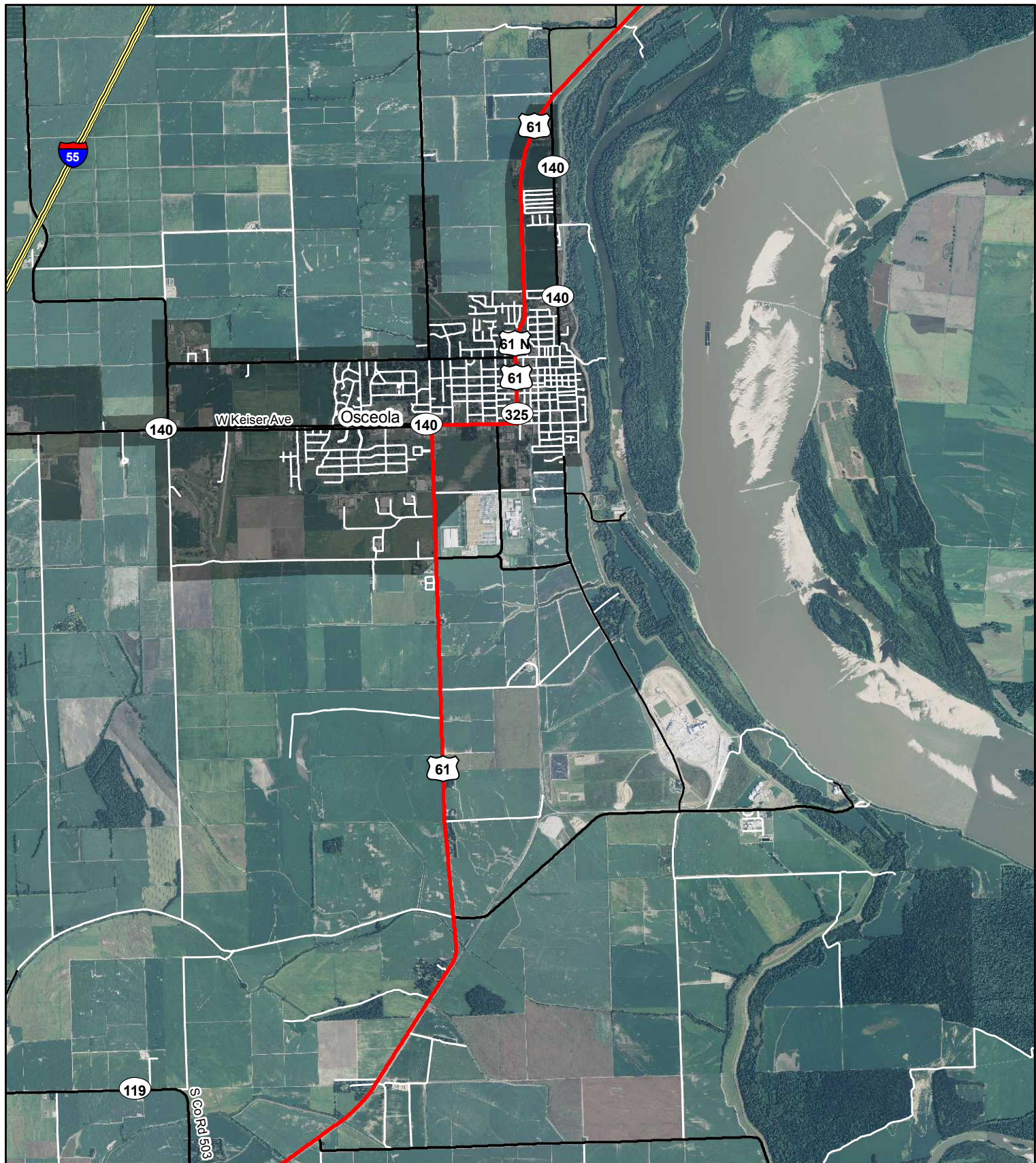
Coordinate System: NAD 1983 UTM Zone 15N
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Datum: North American 1983

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Etowah
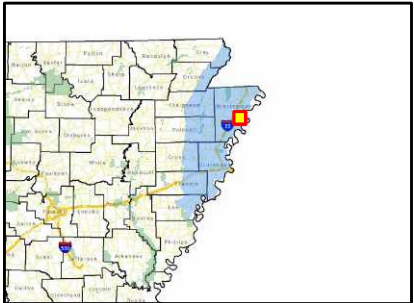
181

Osceola

140

Keiser

Kieser Rd

55

119

0   0.5   1   2   3   4
                                        Miles

G16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Etowah

F7
F7
F4
F7
F4
F13
F13
F13
F13
F13
D1
F13
F13
RB7
RB7
F4
D1
RB7
D1
D1
181

140
D1
D1
D1
F13
F13
D1
D1
RB7
F13
F13
D1
F4
RB7
Keiser
F13
RB7
D1
F4
55
F13
F4
RB7
F7
RB7
F13
D1
F7
F13
D1
Osceola
F7
D3
D1
119
D3

0   0.5   1   2   3   4
Miles

G16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

I-55

61

140

140

61 N

61

325

W Keiser Ave   Osceola   140

61

140

119   S Co Rd 503

0   0.5   1   2   3   4
Miles

G17

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

F4

F13

D3

F7

F4

D3

61

140

140

55

F13

D3

61 N

140

Osceola

61

325

140

D3

W Keiser Ave

140

D3

D1

D3

F4

F4

D3

F13

D3

D3

D3

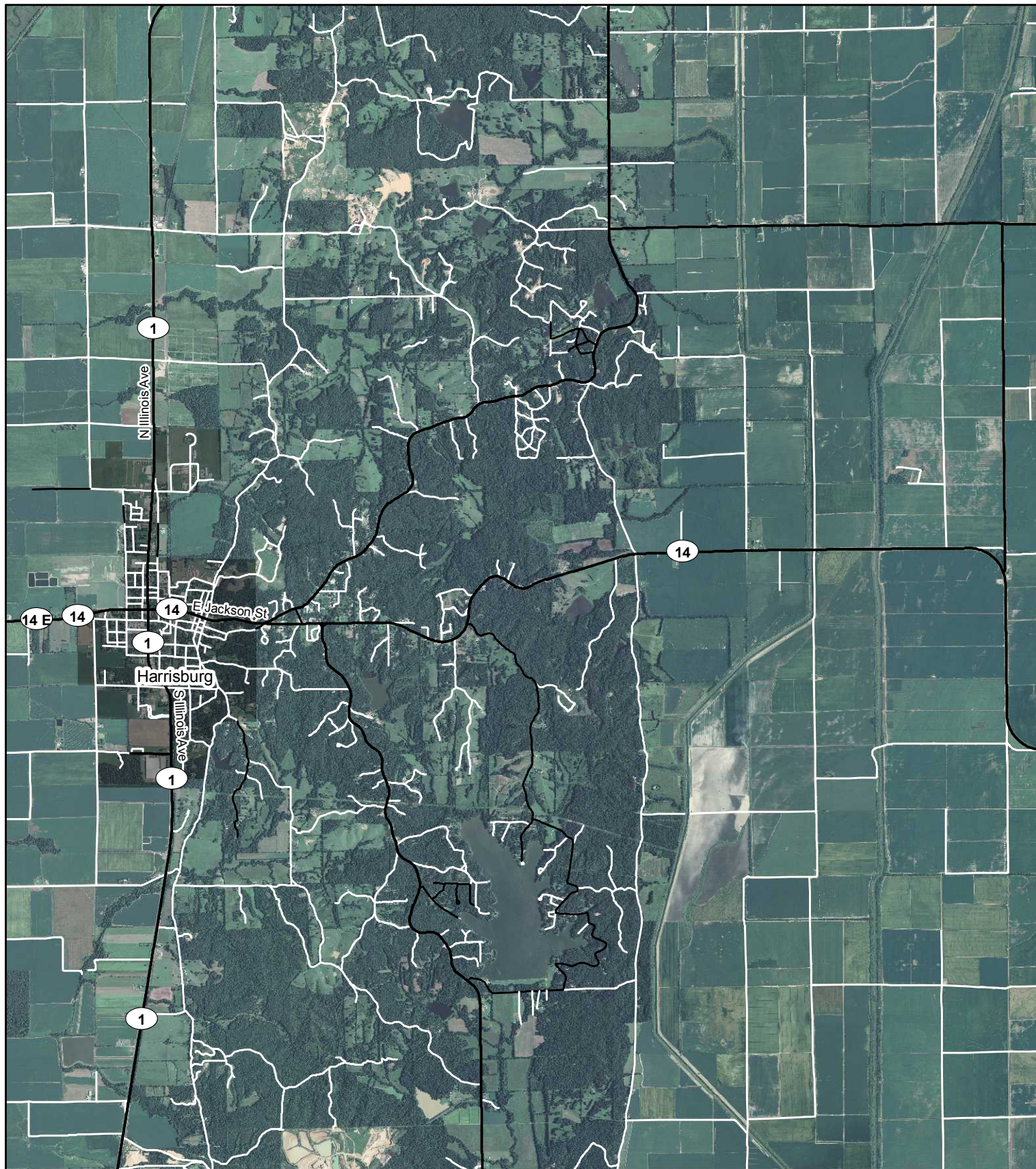D3

D3

61

F6

D3

D3

D3

F6

F4

D3

119

S Co Rd 503

D3

| 0 | 0.5 | 1 | 2 | 3 | 4 |

Miles

G17

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

N Illinois Ave

1

14

14 E   14   14   E Jackson St

1

Harrisburg

S Illinois Ave

1

1

1

14

0   0.5   1   2   3   4
Miles

H12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983
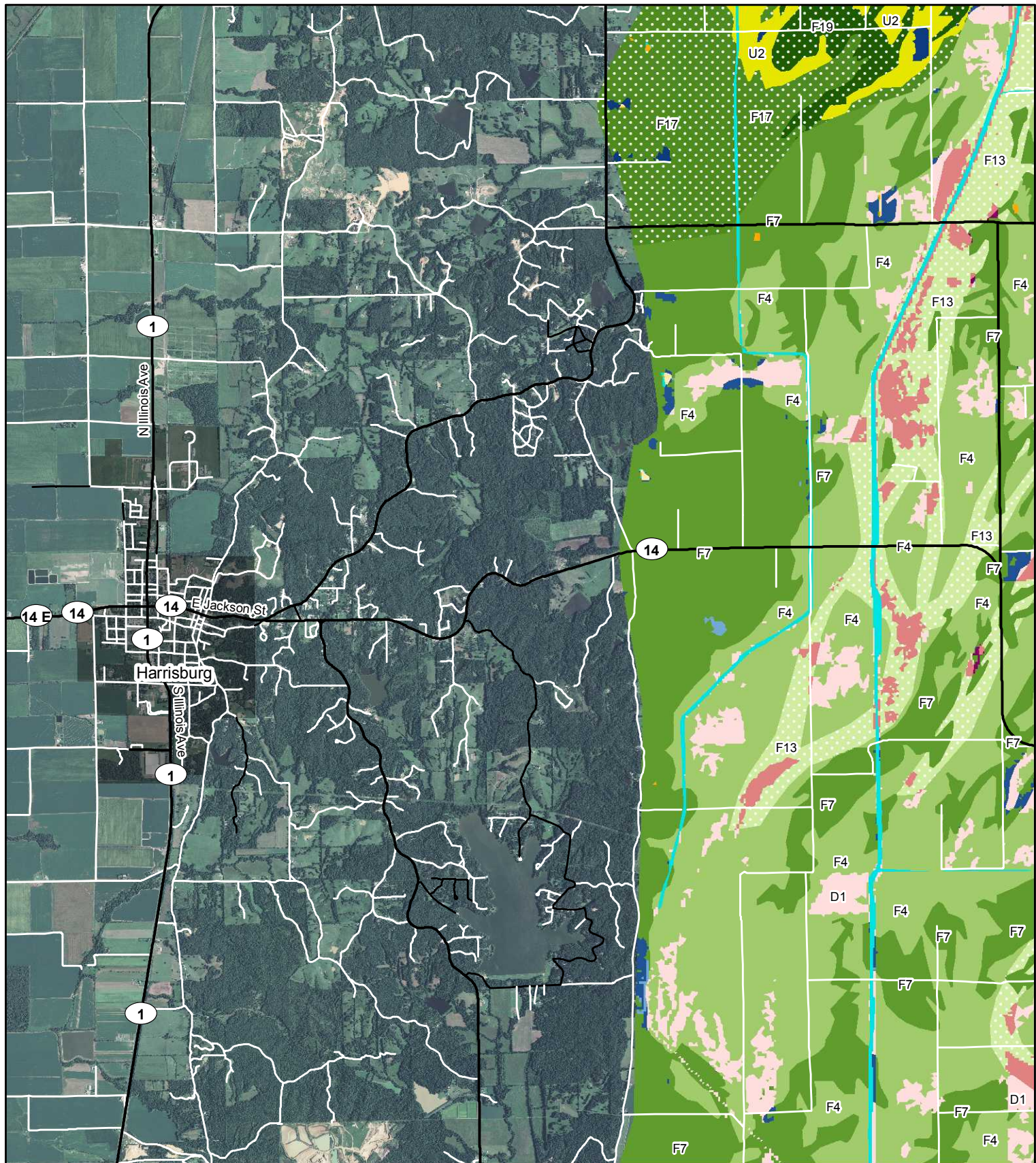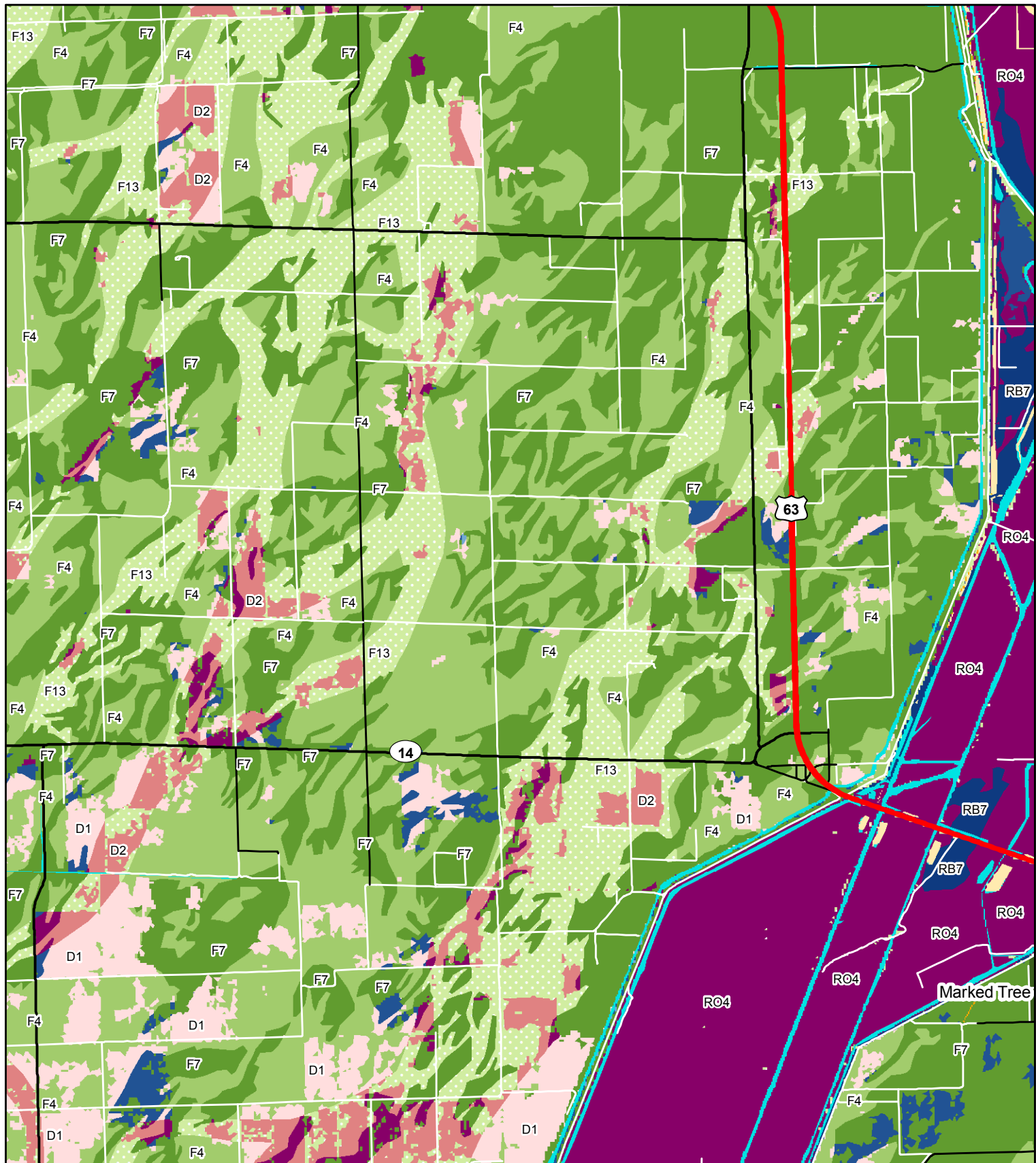
N

N Illinois Ave

Harrisburg

S Illinois Ave

E Jackson St

14 E   14   14

1

F17   F17   F19   U2   U2

F7   F4   F13   F13

F4   F4   F4   F7

F4   F7   F4   F4

F7   F4   F7   F13   F7

14   F7   F4   F13

F4   F4   F4

F13   F7   F7

F7   F4   F7

F4   D1   F4   F7   F7

F7   F7

F4   F4   F7   D1

F7   F4

0   0.5   1   2   3   4
Miles

H12

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

63

14

Marked Tree

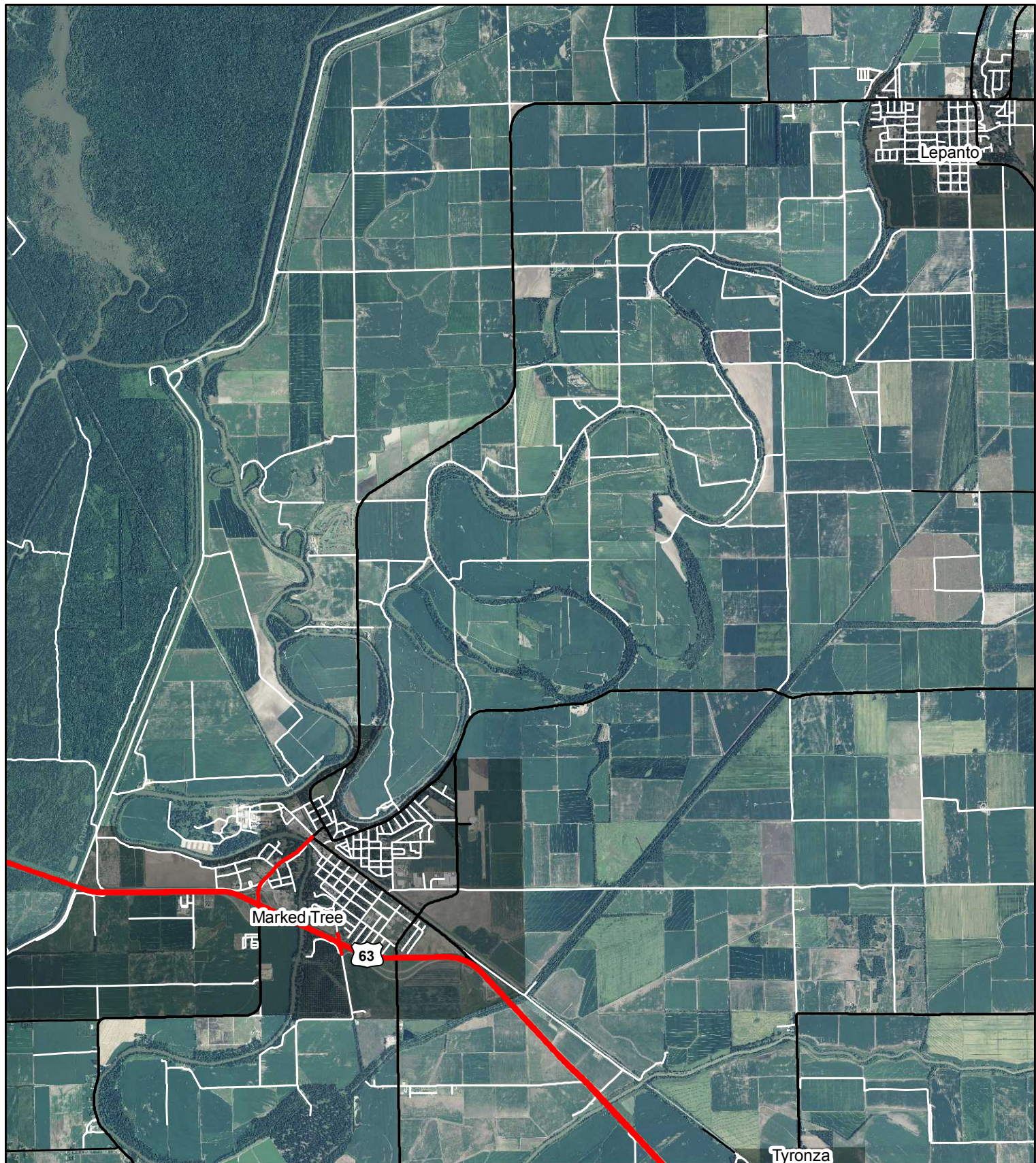0   0.5   1   2   3   4
                                                            Miles

H13

Coordinate System: NAD 1983 UTM Zone 15N
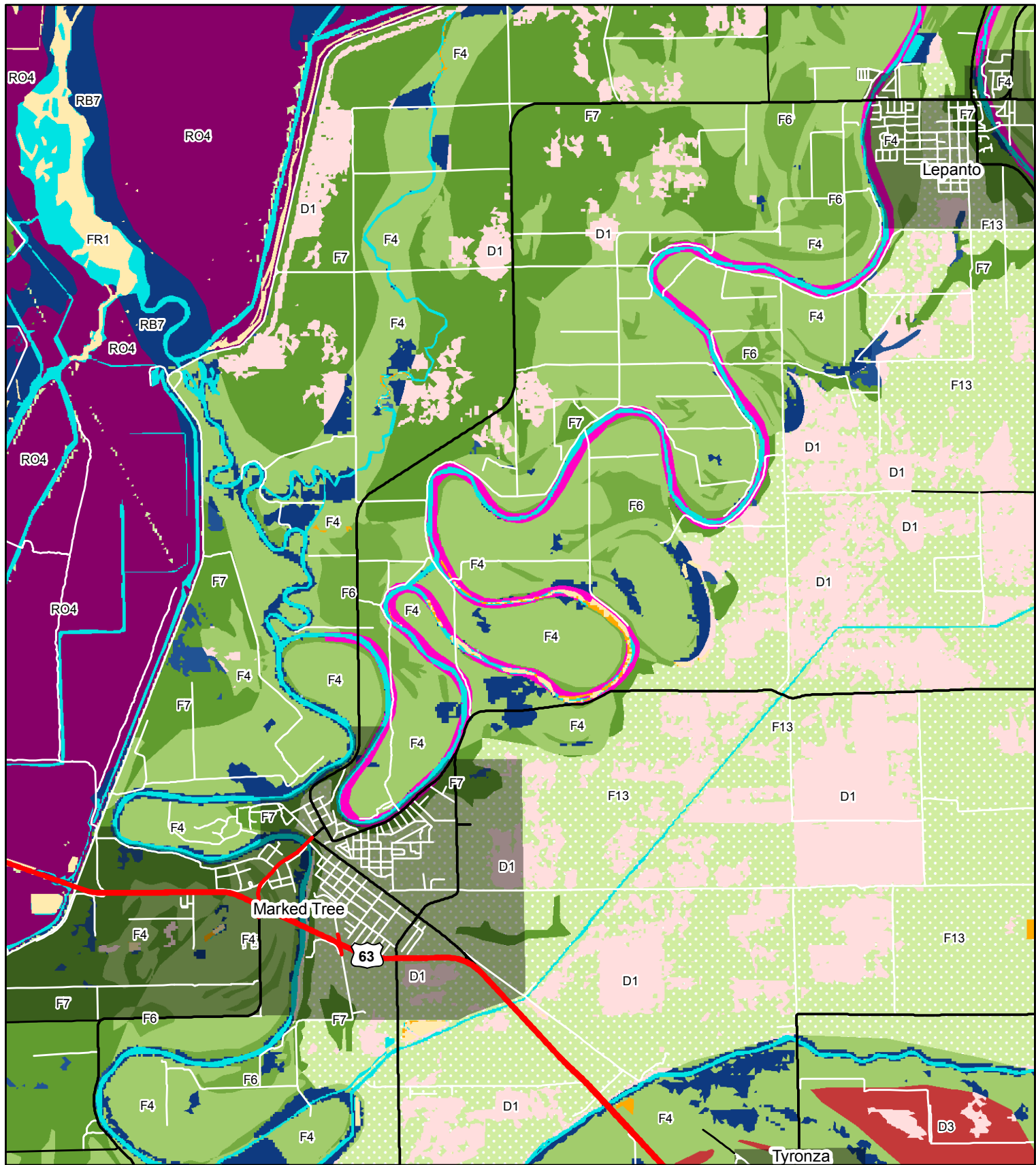Projection: Transverse Mercator
Datum: North American 1983

N

F13 F4 F7 F4 F7 F4 F7 F4
F7 F7 F13 D2 F7
F7 F13 D2 F4 F4 F7
F7 F4 F13 F4 F13 F7 F13
F7 F4 F4 F4 RO4
F4 F7 F4 F7 RB7
F4 F7 F4 RO4
F4 F13 F4 D2 F4 F7 F7 F13
F7 F4 F7 F7 F4
F13 F4 F4 F4
F4 F4 F7 F4
F7 F7 F4 F13 F4
F7 F4 D1 D2 F7 F13 D2 F4 RO4
F7 F4 F7 F7 D1 RB7
D1 F7 RB7
F4 D1 F7 RO4
F7 F4 D1 RO4 RO4 Marked Tree
D1 F7 RO4
F4 F7 F4
D1 F4 F7
F4 D1

63
14

0   0.5   1   2   3   4
Miles

H13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Lepanto

Marked Tree

63

Tyronza

H14

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Coordinate System: NAD 1983 UTM Zone 15N
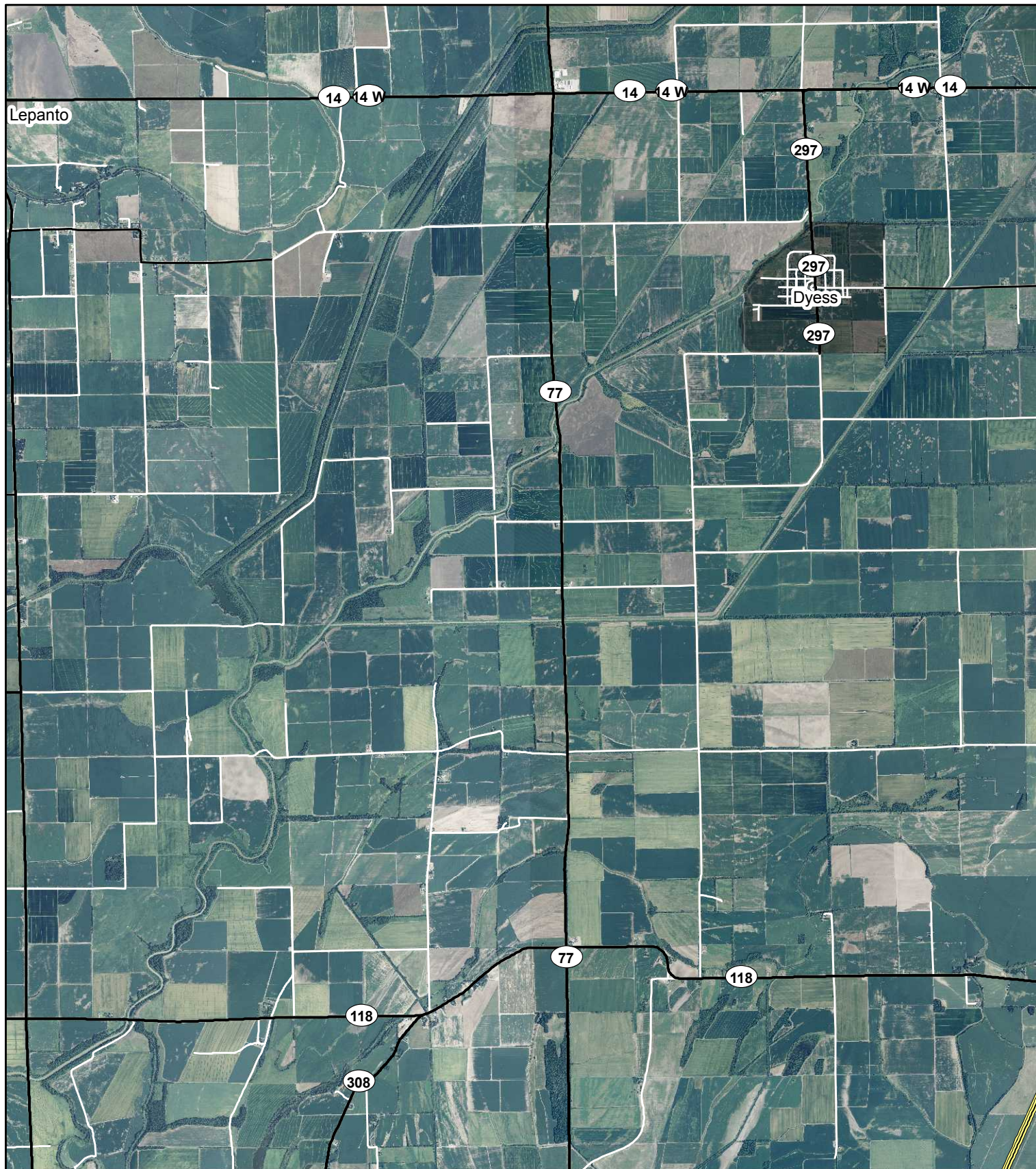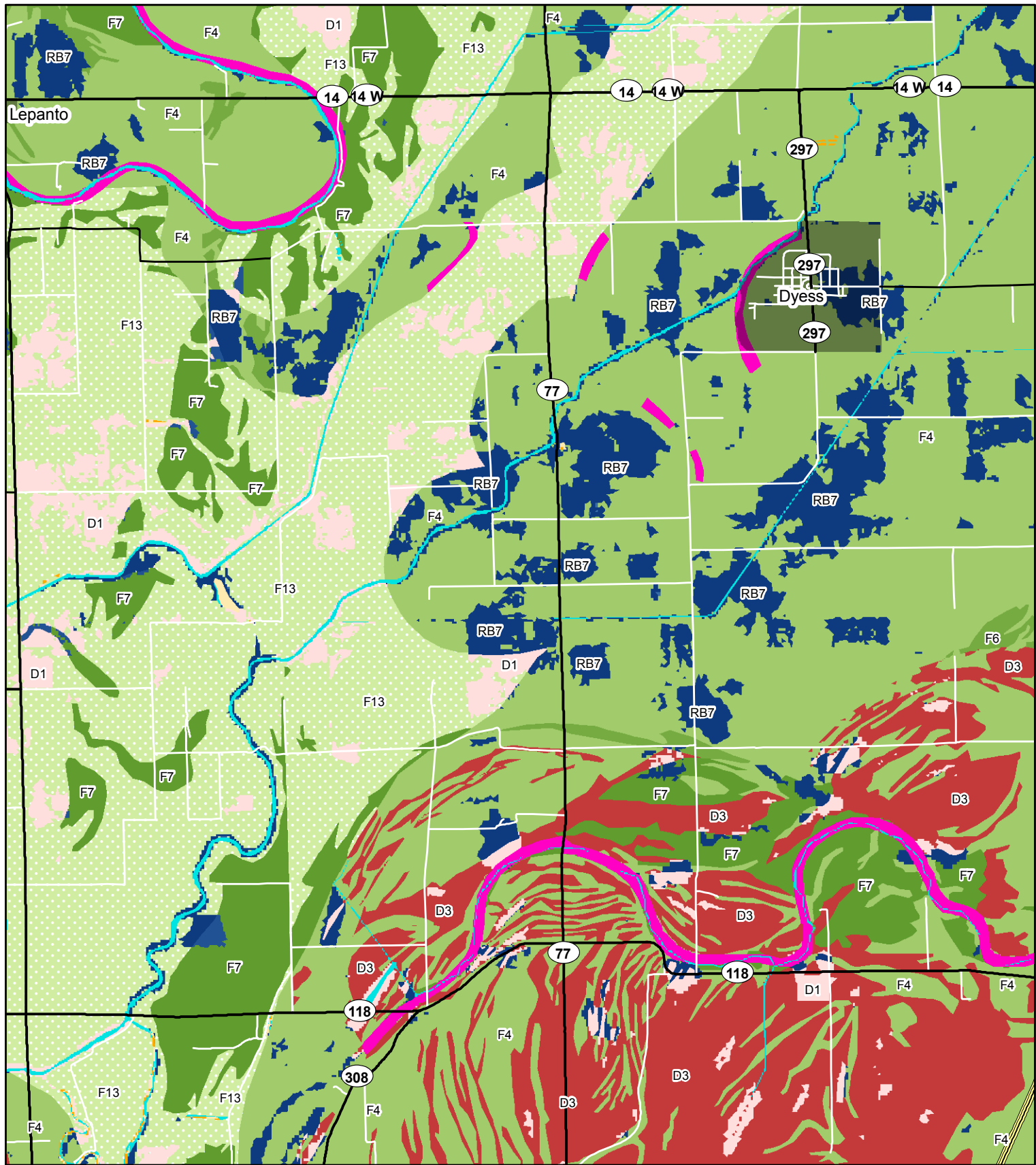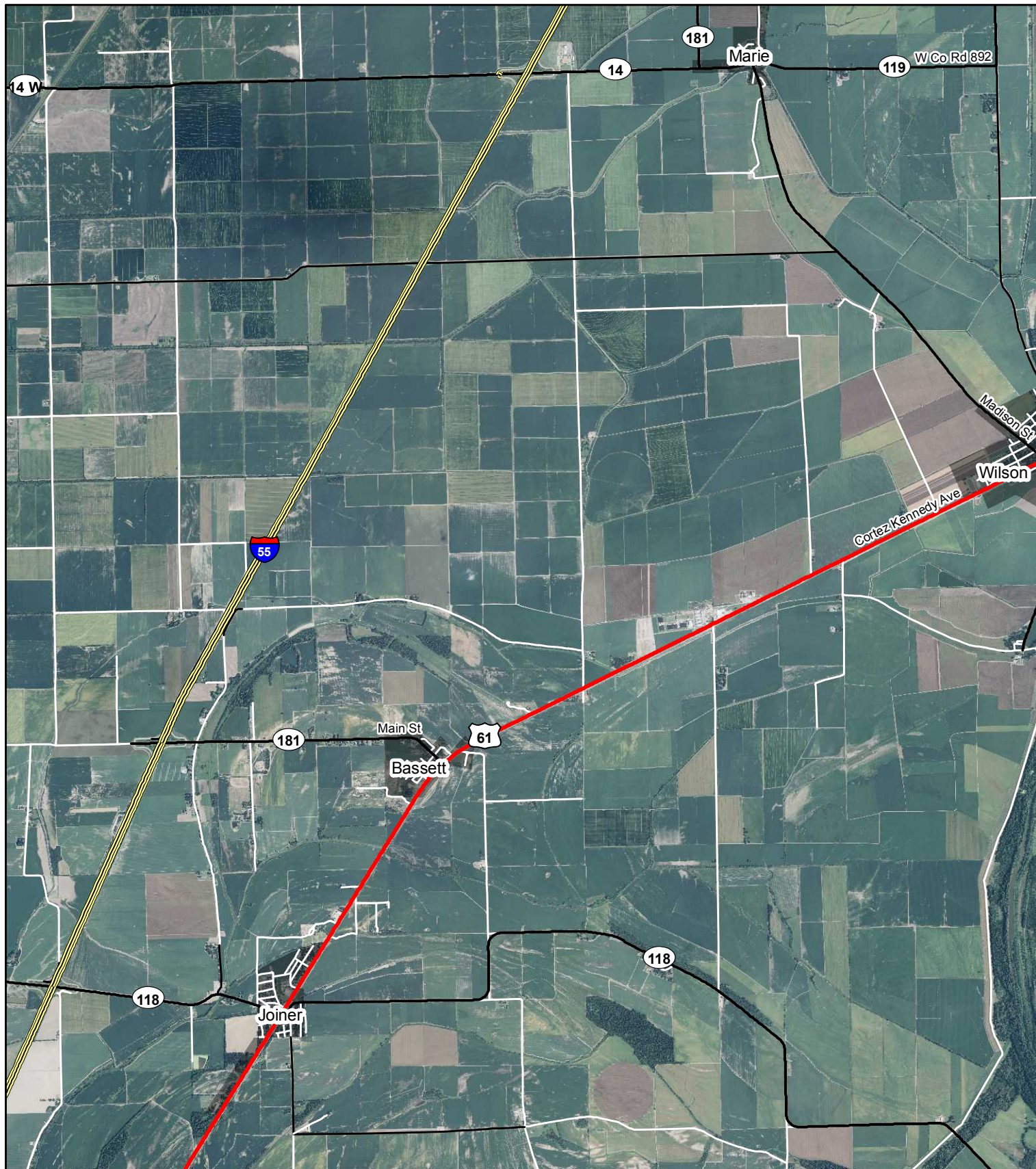Projection: Transverse Mercator
Datum: North American 1983

H14

Lepanto

14 14 W   14 14 W   14 W 14

297

297
Dyess

297

77

77   118

118

308
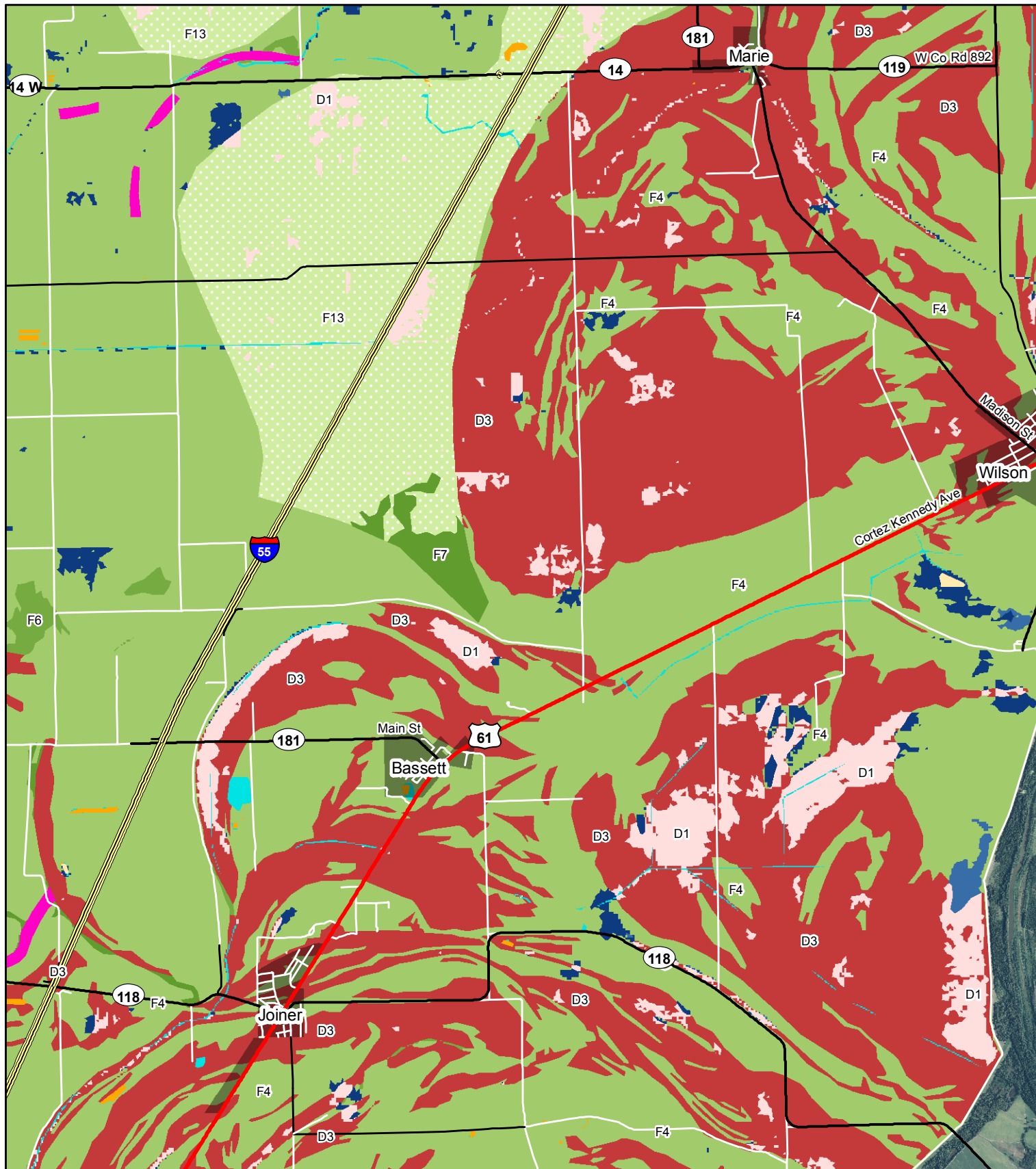
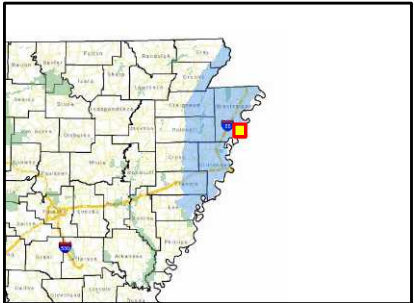0   0.5   1   2   3   4
                                    Miles

H15

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

181

14

Marie

119 W Co Rd 892

14 W

Madison St

Wilson

Cortez Kennedy Ave

I-55

Main St

181

61

Bassett

118

118

Joiner

0	0.5	1	2	3	4

Miles

H16

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

H16

0   0.5   1   2   3   4
Miles

119

61

Main St.

Wilson
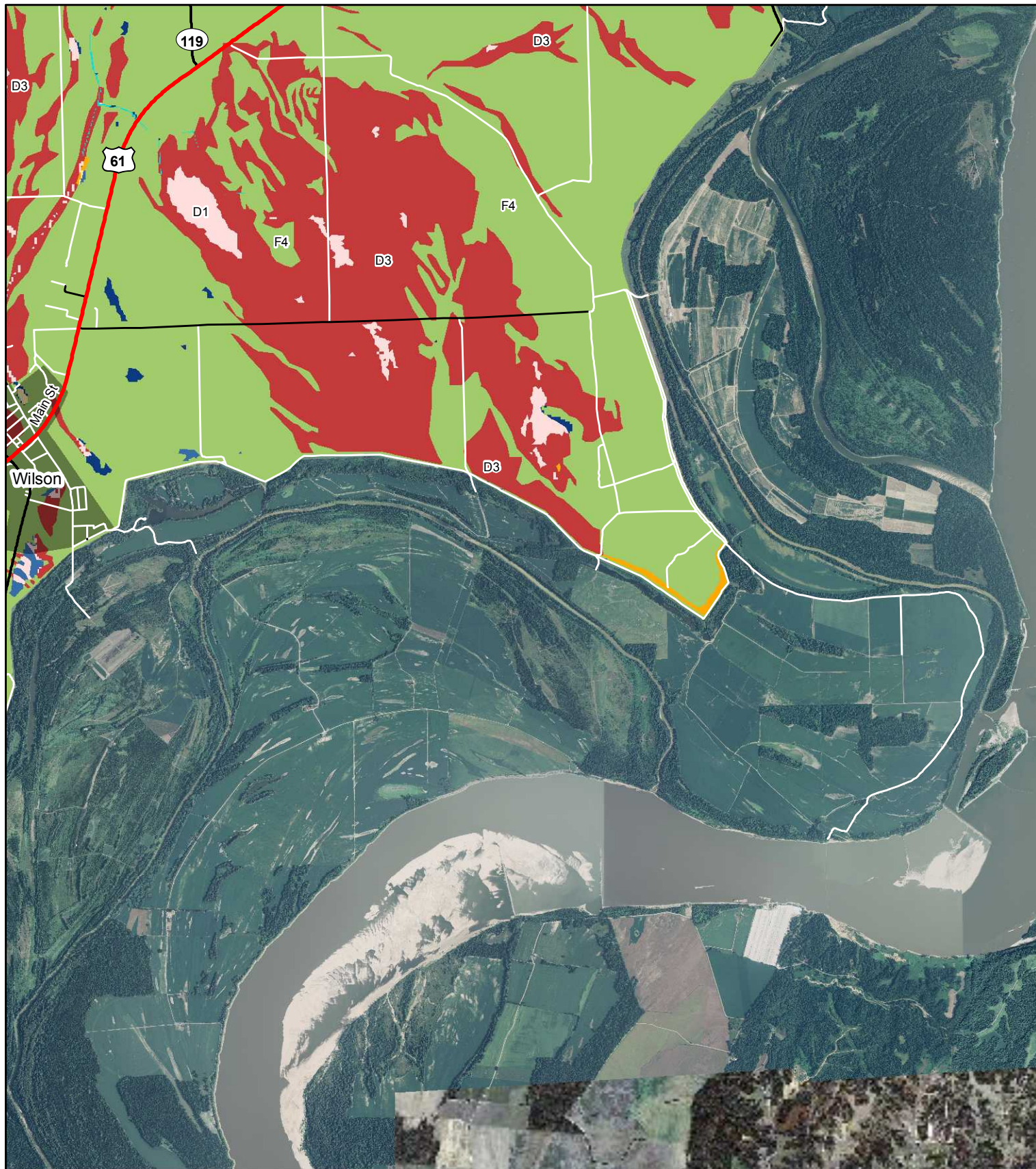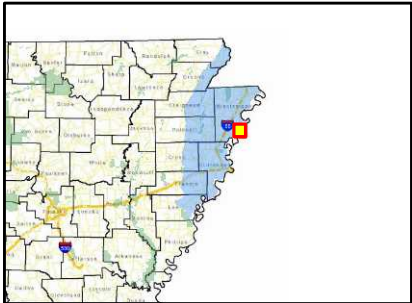
0   0.5   1   2   3   4
                                  Miles

H17

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

D3

119

61

D3

D1

F4

F4

D3

D3

Main St

Wilson

D3

0   0.5   1   2   3   4
Miles

H17

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

1

Cherry Valley

42 E

42 E

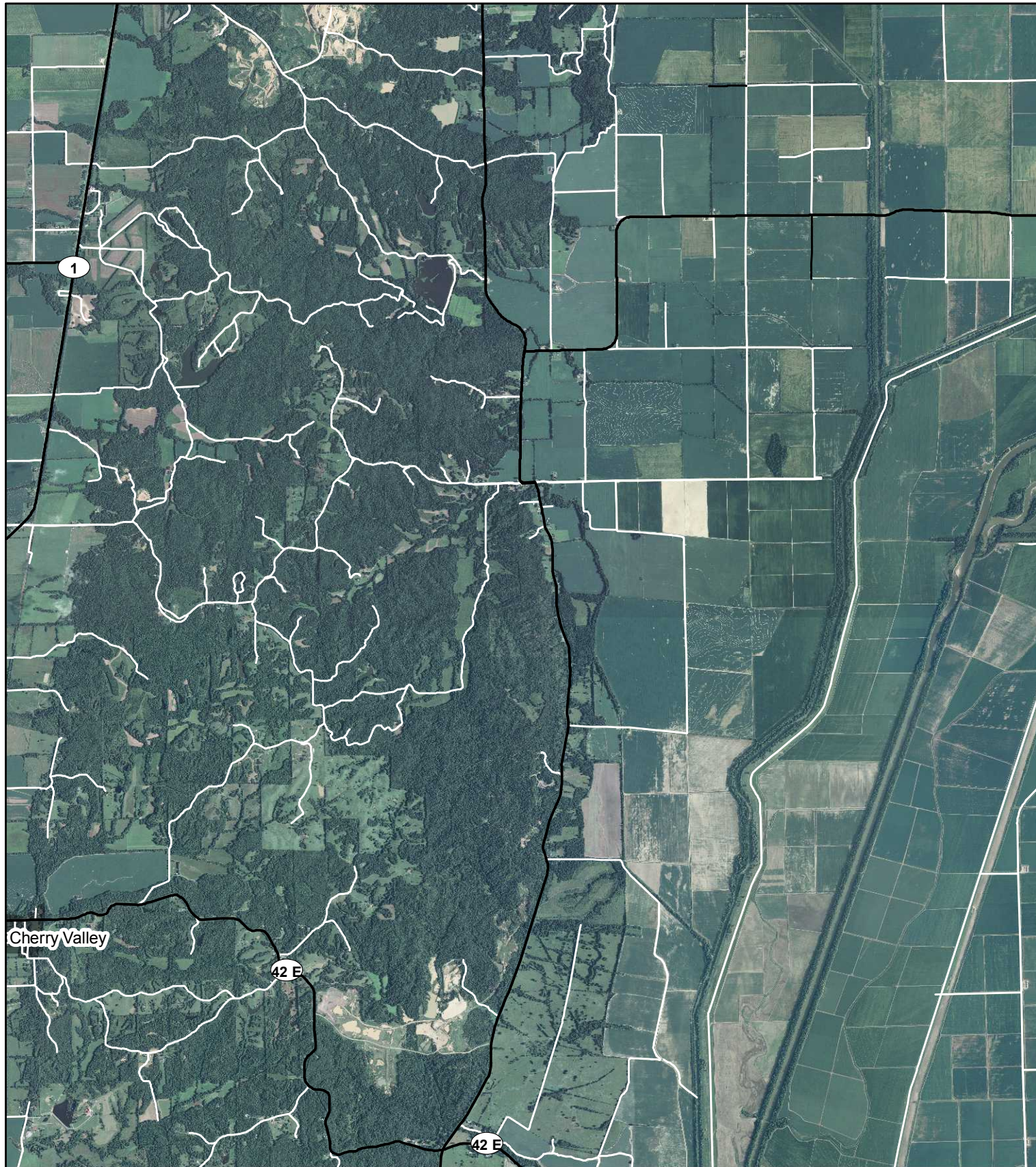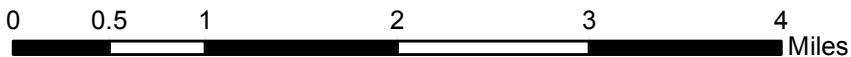0   0.5   1   2   3   4
                                                    Miles

I12

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Cherry Valley

1

42 E

42 E

F4

F4

D1

RB6

F7

RB6

RB3

RB7

RB6

RB3

RB7

RO4

RB7

RB6

RB3

RO4

RO4

RB7

RB6

F7

RB7

RO4

0   0.5   1   2   3   4
Miles

I12

N

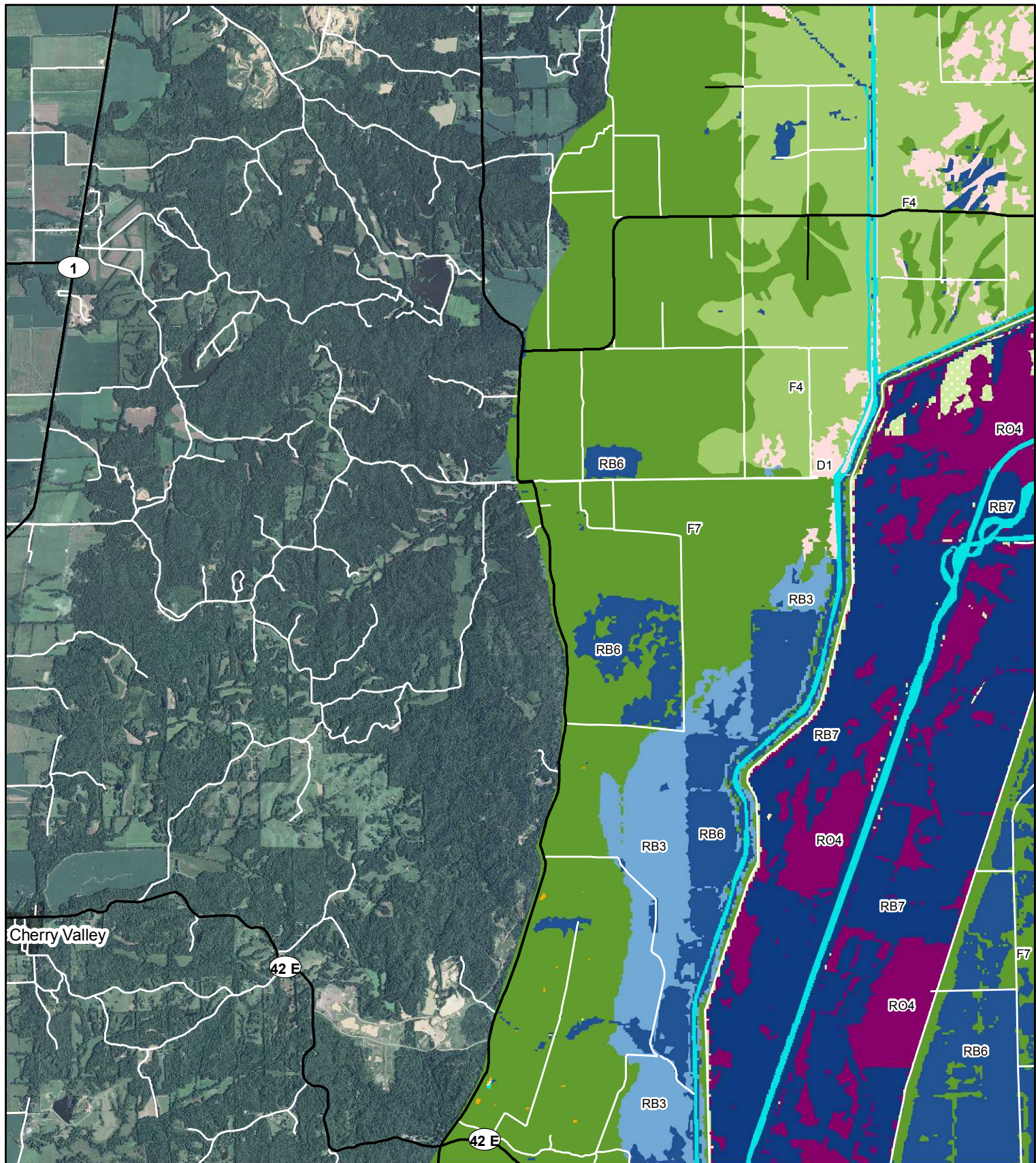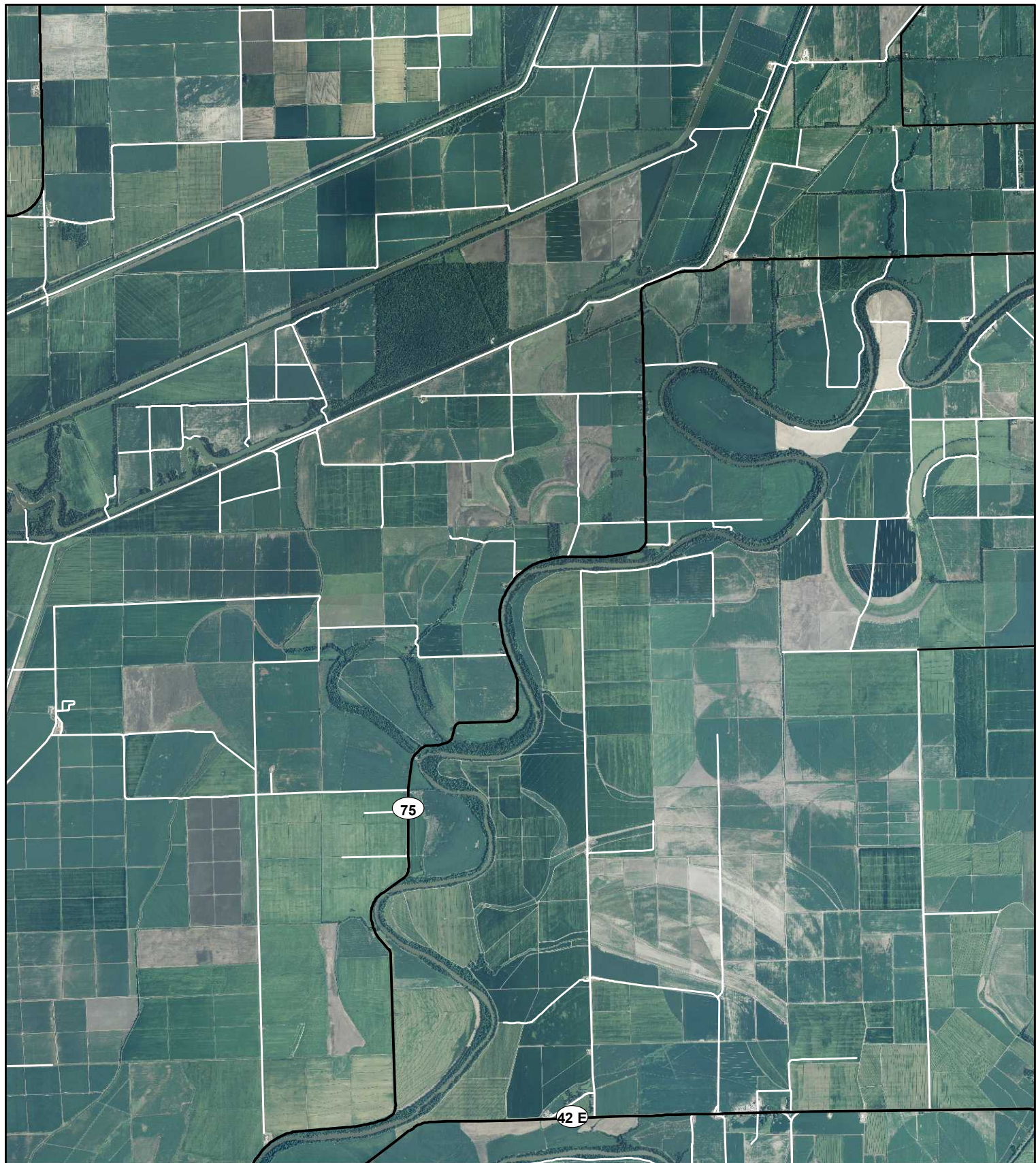Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

0   0.5   1   2   3   4
                                     Miles

I13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

75

42 E
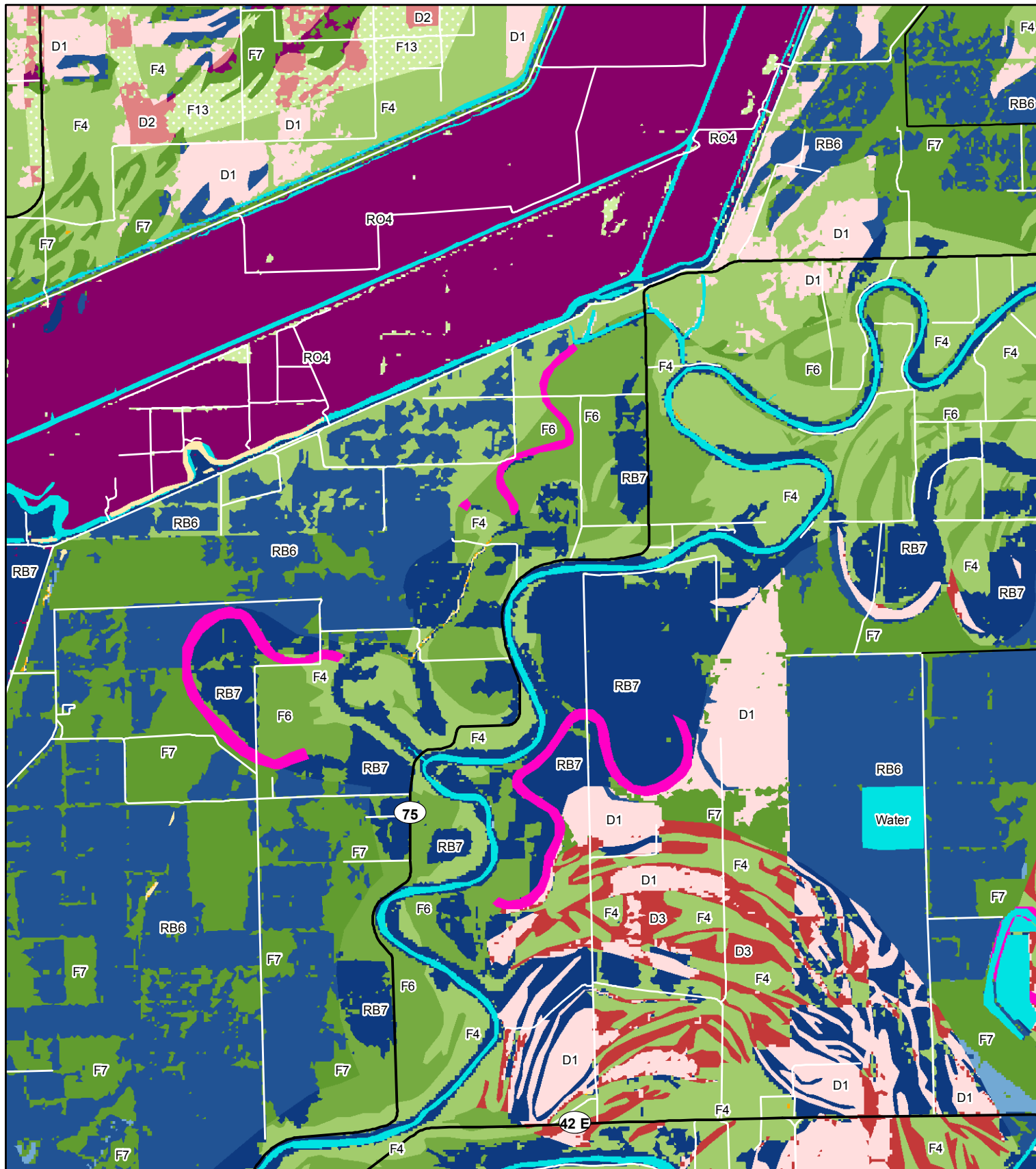
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Projection: Transverse Mercator
Datum: North American 1983

I13

0   0.5   1   2   3   4
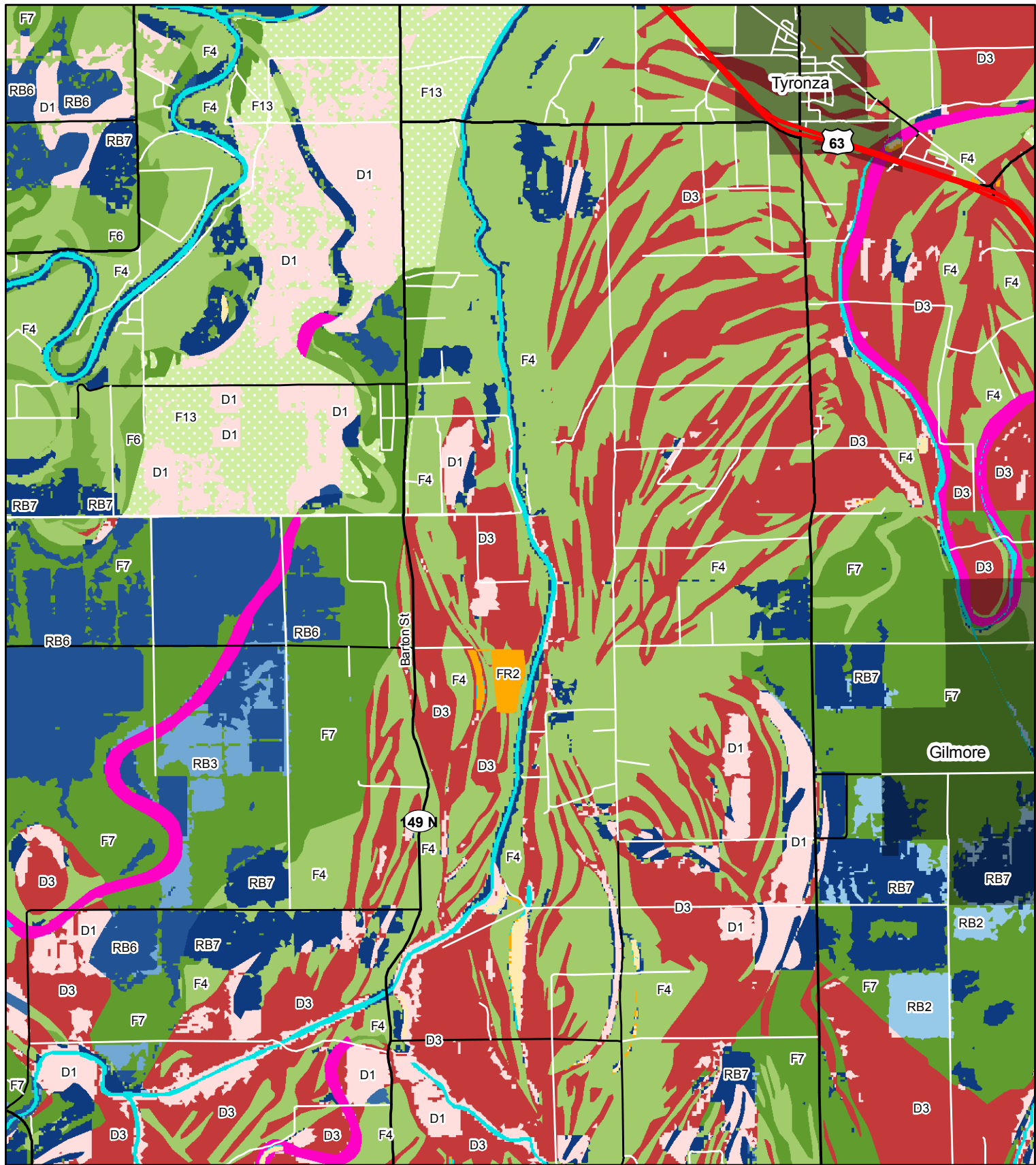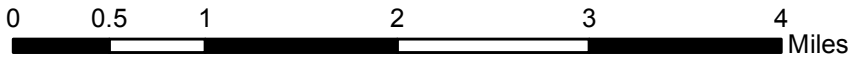   Miles

Tyronza

63

Barton St

49 N

Gilmore

0   0.5   1   2   3   4
Miles

I14

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Tyronza

63

F7
F4
RB6
D1 RB6
RB7
F6
F4
F13
F13
F4
F13
D1
D1
F4
D1
F6
D1
F13
D1
D1
D3
RB7 RB7
F4
D1
F4
D3
F4
F4
D3
D3
D3
D3
D3
F4
RB7
F7
RB6
RB6
F7
Barton St
D3
F4 FR2
RB7
F7
D3
RB3
F4
F7
D1
RB7
D3
D3
Gilmore
F7
D3
149 N
F4
F4
D1
D1
D1
D3
RB6
RB7
F4
RB7
RB7
D3
F4
RB2
D3
F4
D1
F7
RB2
F7
D3
F7
F7
RB7
D1
D3
F4
D1
D3
F7
D3
D3
D3
F4

| 0 | 0.5 | 1 | | 2 | | 3 | | 4 | |
Miles

I14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Birdsong

308

63

Gilmore

61

I-55

77

61

Turrell

77

I15

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Birdsong

Gilmore

Turrell

308

63

61

55

77

61

77

F4
F7
F13
D3
D1
F7
RB7
RB2
RB7
FR1
FR2
D3

0   0.5   1   2   3   4
Miles

I15

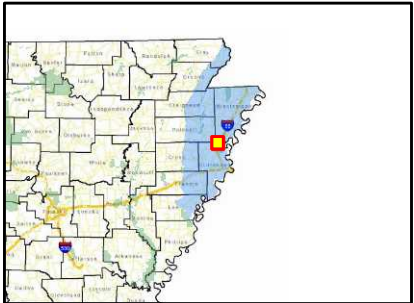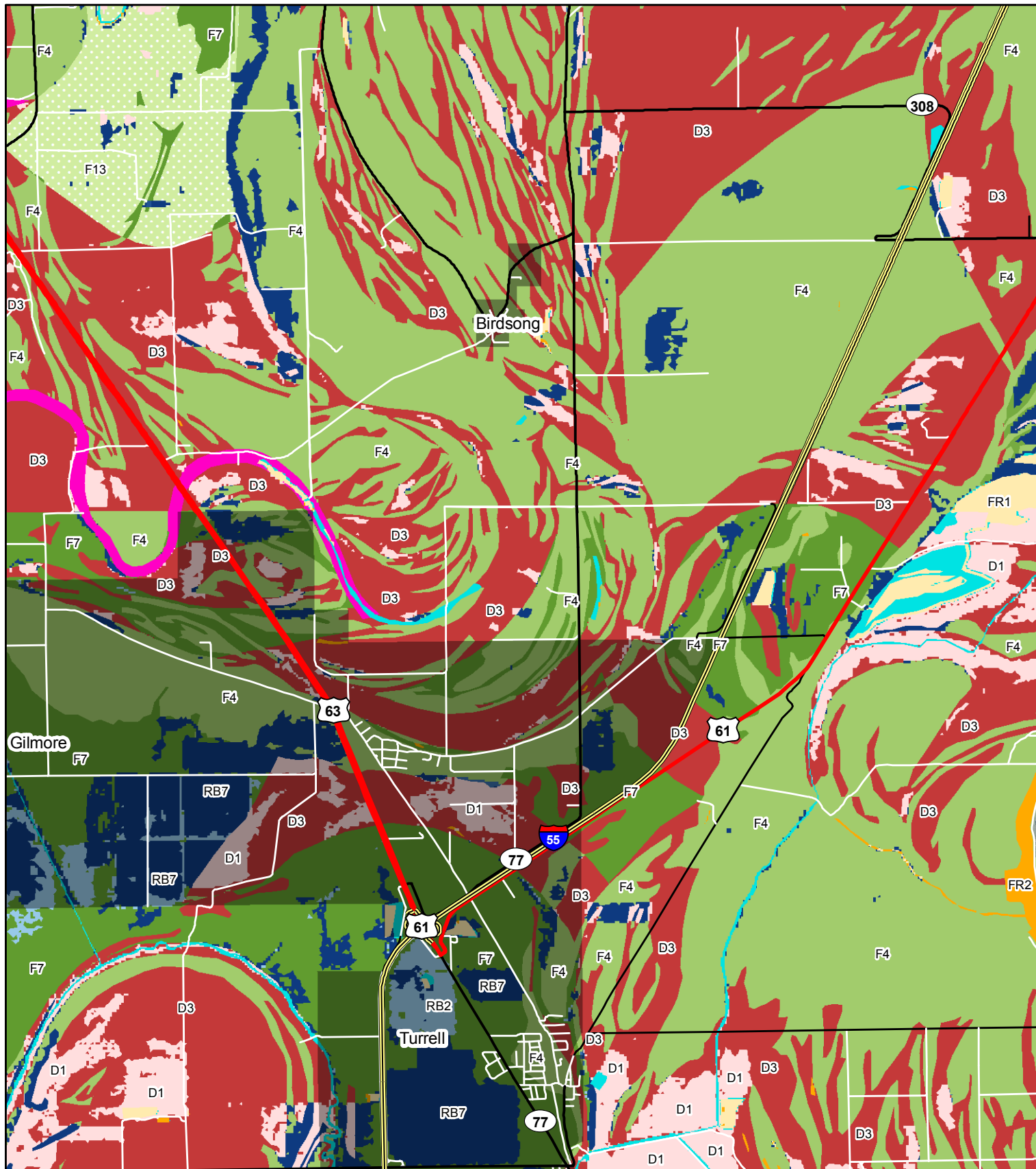Coordinate System: NAD 1983 UTM Zone 15N
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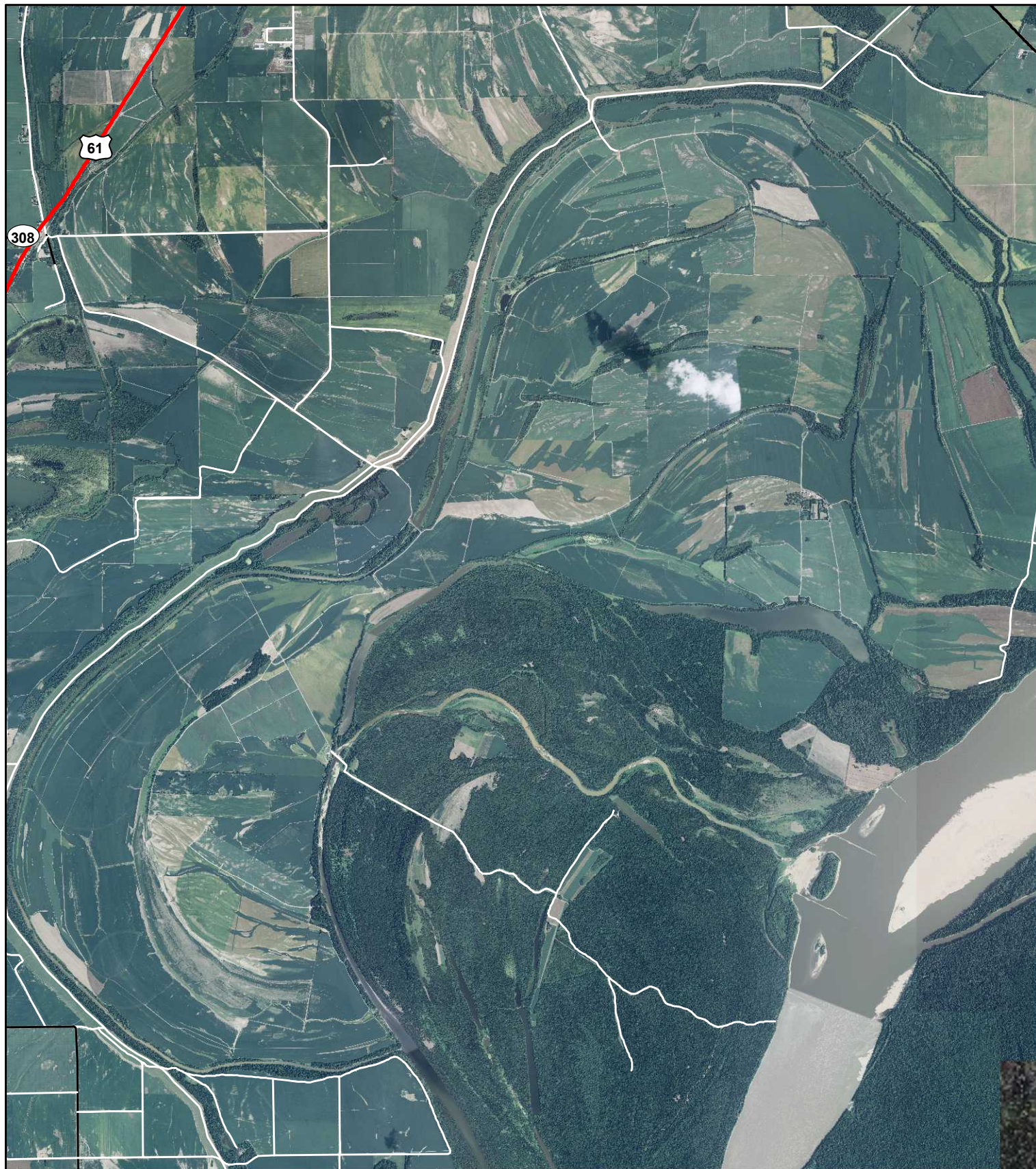
N

61

308

0   0.5   1   2   3   4
                                    Miles

I16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

F4
D3
F4
F4
61
F4
F4
D3
D1
F4
F4
F4
308
F6
RB7
RB7
F6
D3
FR1
F4
F4
D3
F4
F4
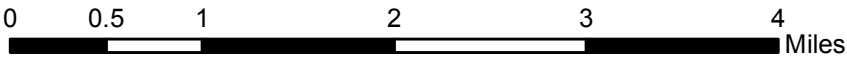F4

0   0.5   1   2   3   4
                                        Miles

I16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

0   0.5   1   2   3   4
Miles

J12

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

42 E

64

64

RB7

RO4

RB6

42 E

RB7

F7

RB6

RB7

RO4

RB3

RO4

RB6

RO4

RB7

RB6

RB7

F7

RB6

RO4

F7

RB6

F6

F6

RB3

F6

F4

RB6

F6

64

F6

RO4

F6

64

F4

RB3

F6

D3

D1

RB7

D1

J12
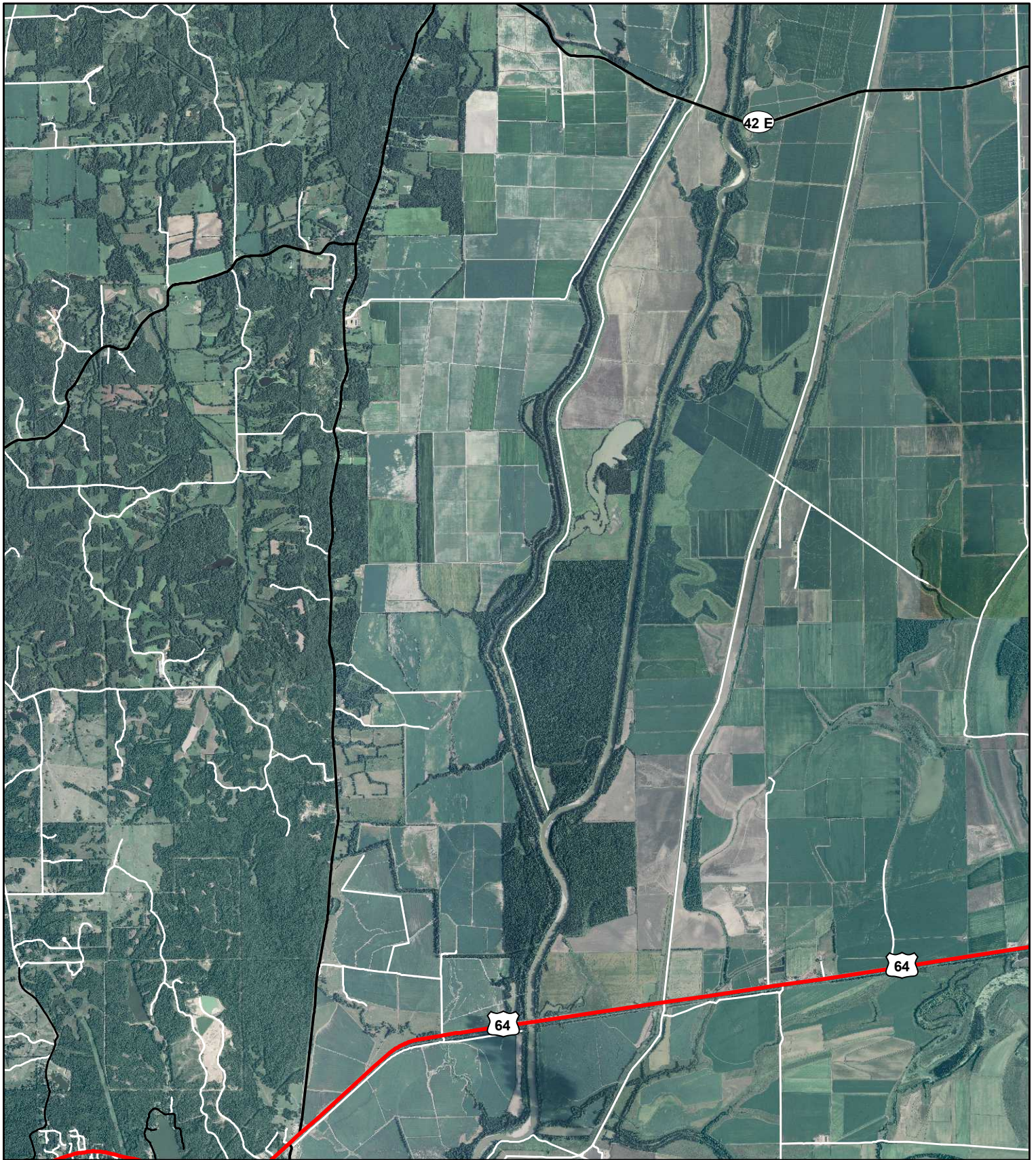
0   0.5   1   2   3   4
                                              Miles

N

Coordinate System: NAD 1983 UTM Zone 15N
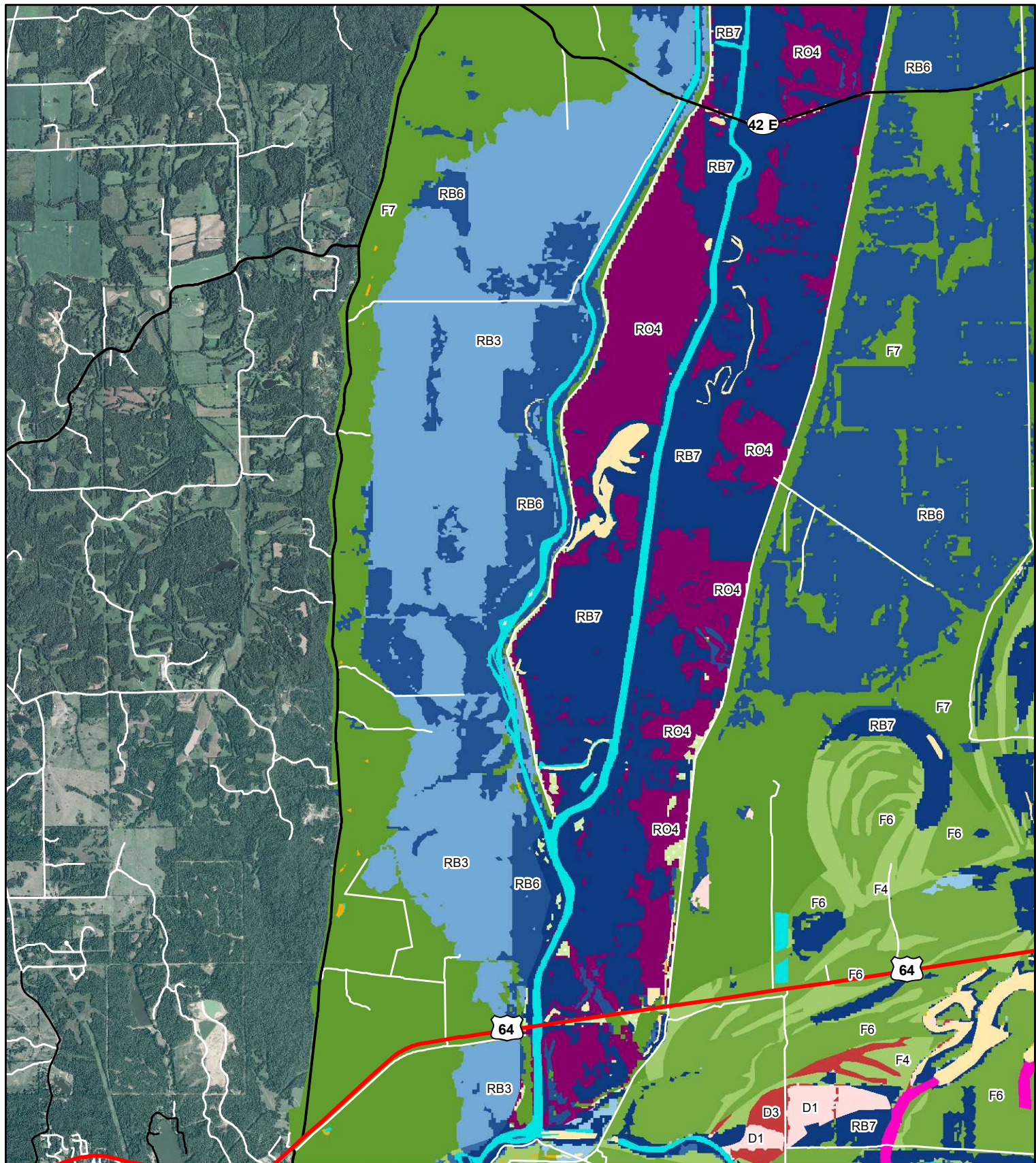Projection: Transverse Mercator
Datum: North American 1983

42 E

75

64

Earle

64

64 Bus

64

75

Parkin

Sparrow Ave

75

0   0.5   1   2   3   4
Miles

J13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Parkin

Earle

Sparrow Ave

42 E

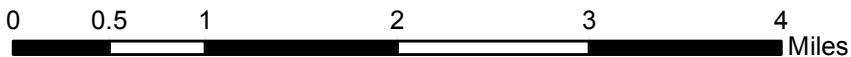75

64

64

64 Bus

64

75

75

J13

0   0.5   1   2   3   4
Miles

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

149 N

Barton St

149
149

2nd St

64

64 Bus

Earle

Lee Ave

149

64

149

0   0.5   1   2   3   4
                                    Miles

J14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Coordinate System: NAD 1983 UTM Zone 15N
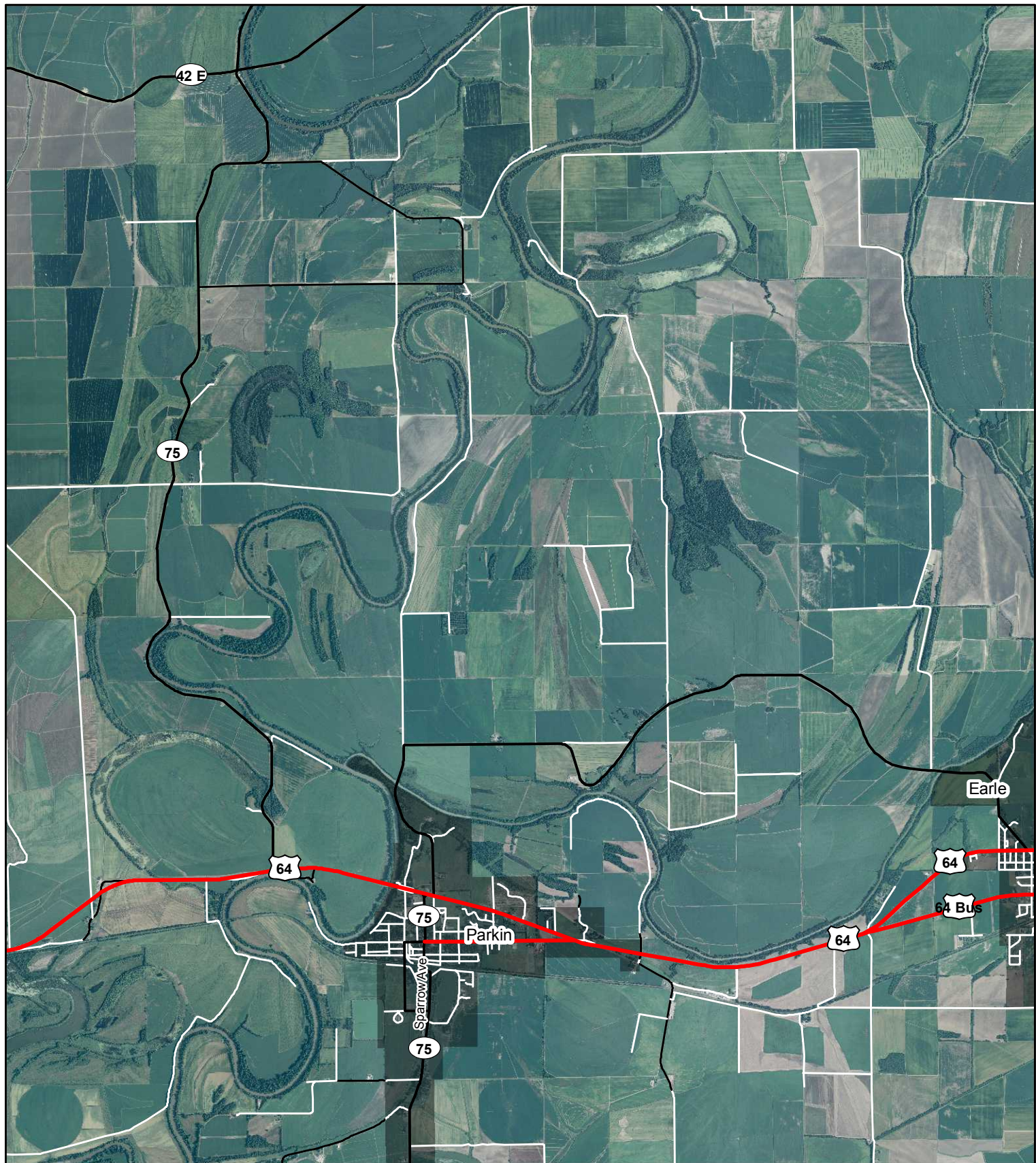Projection: Transverse Mercator
Datum: North American 1983

J14

0   0.5   1   2   3   4
Miles

Turrell

77

Clarkedale

Jericho

I-55

77

Marion

0   0.5   1   2   3   4
                                          Miles

J15

Coordinate System: NAD 1983 UTM Zone 15N
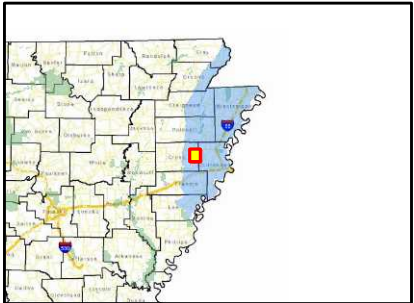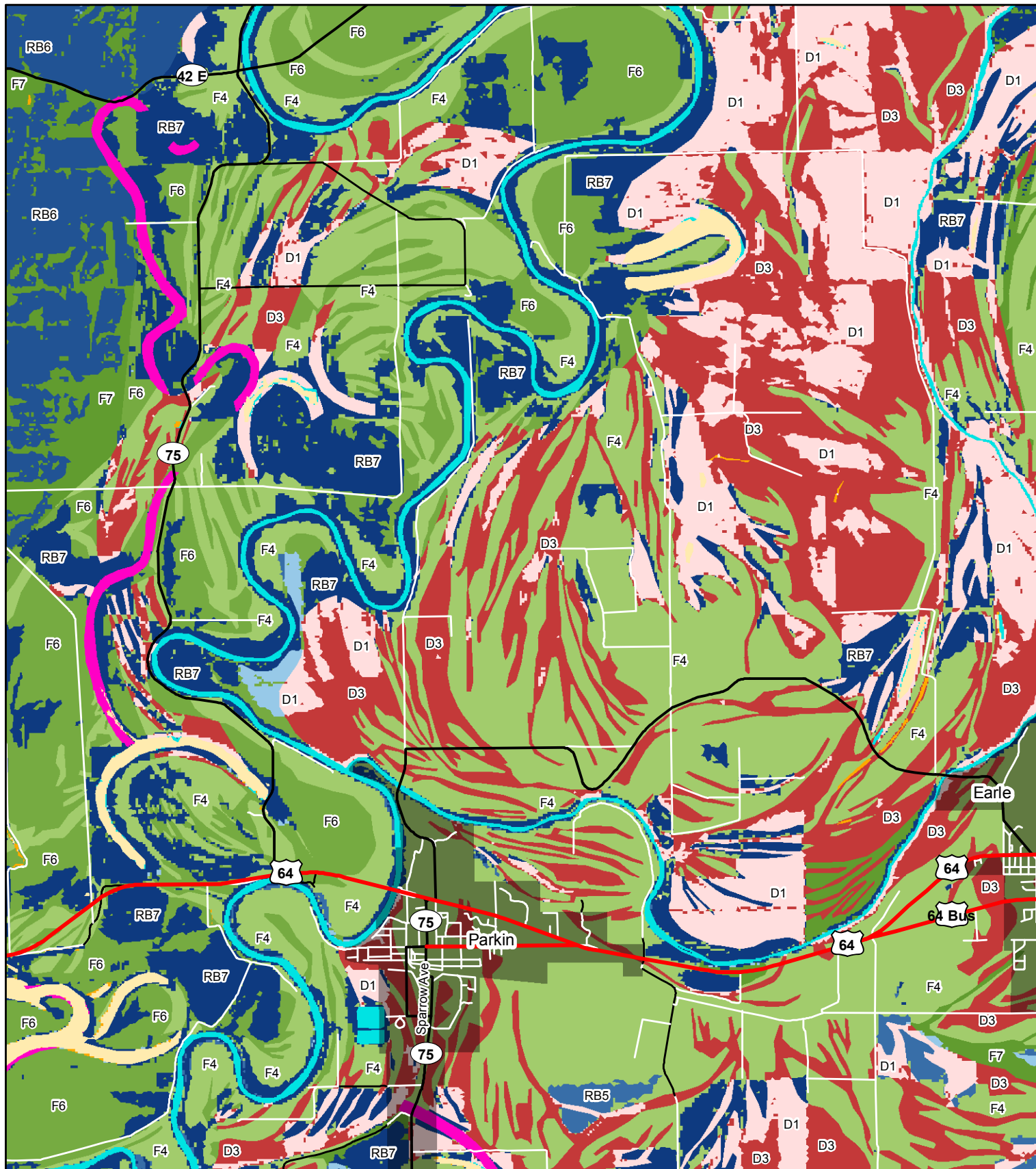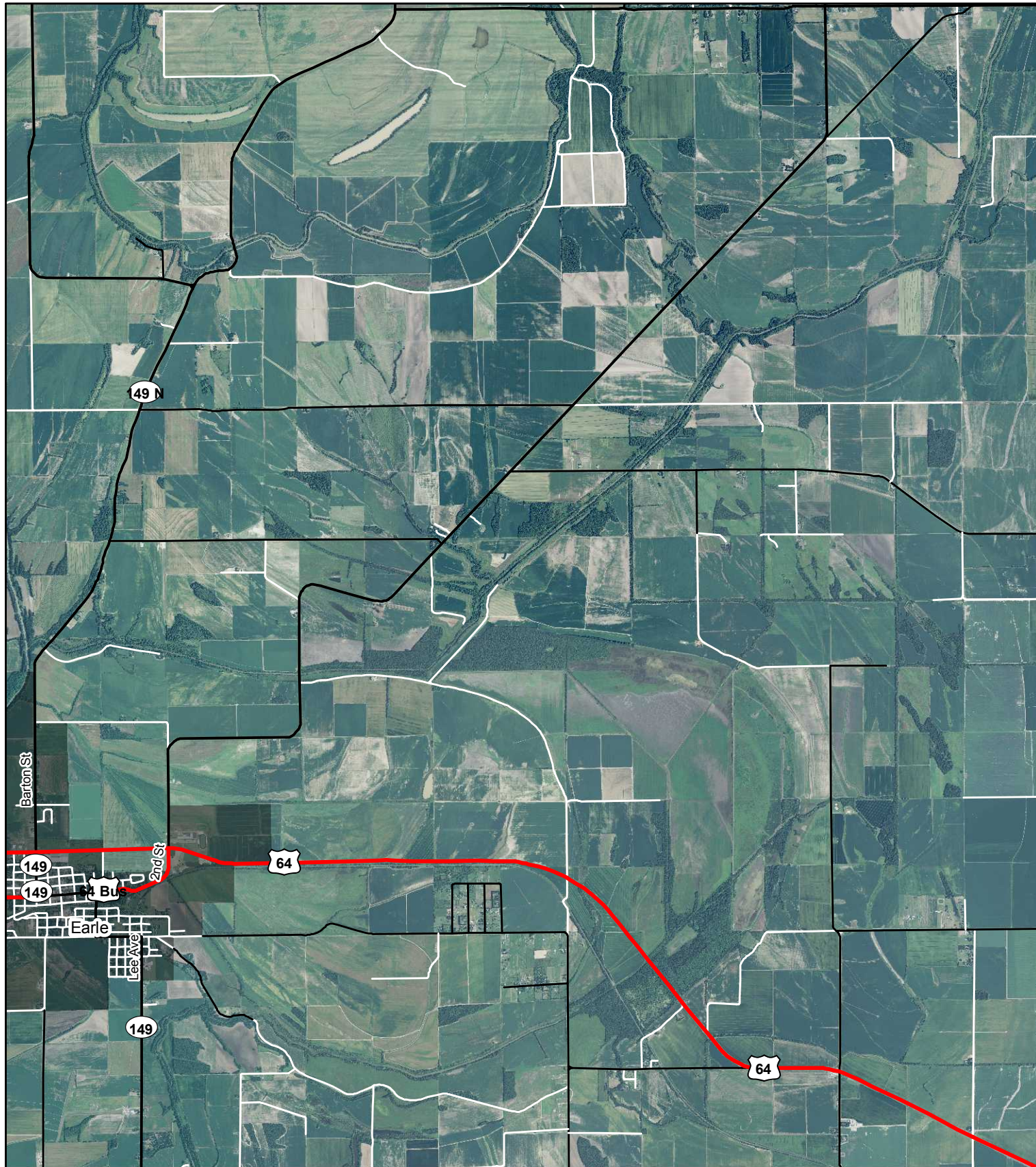Projection: Transverse Mercator
Datum: North American 1983

N

Turrell F7

D1

D1

D3

D1

D1

D1

D1

D1

D1

D3

D3

D3

D1

RB7

RB7

FR1

F4

D1

D3

F4

D3

F4

D3

D1

RB7

F4

F7

F4

F4

D3

FR1

RB7

RB7

F4

F4

F4

F4

Clarkedale

77

F6

F6

Jericho

F4

RB7

55

F6

77

D3

D3

Marion

F4
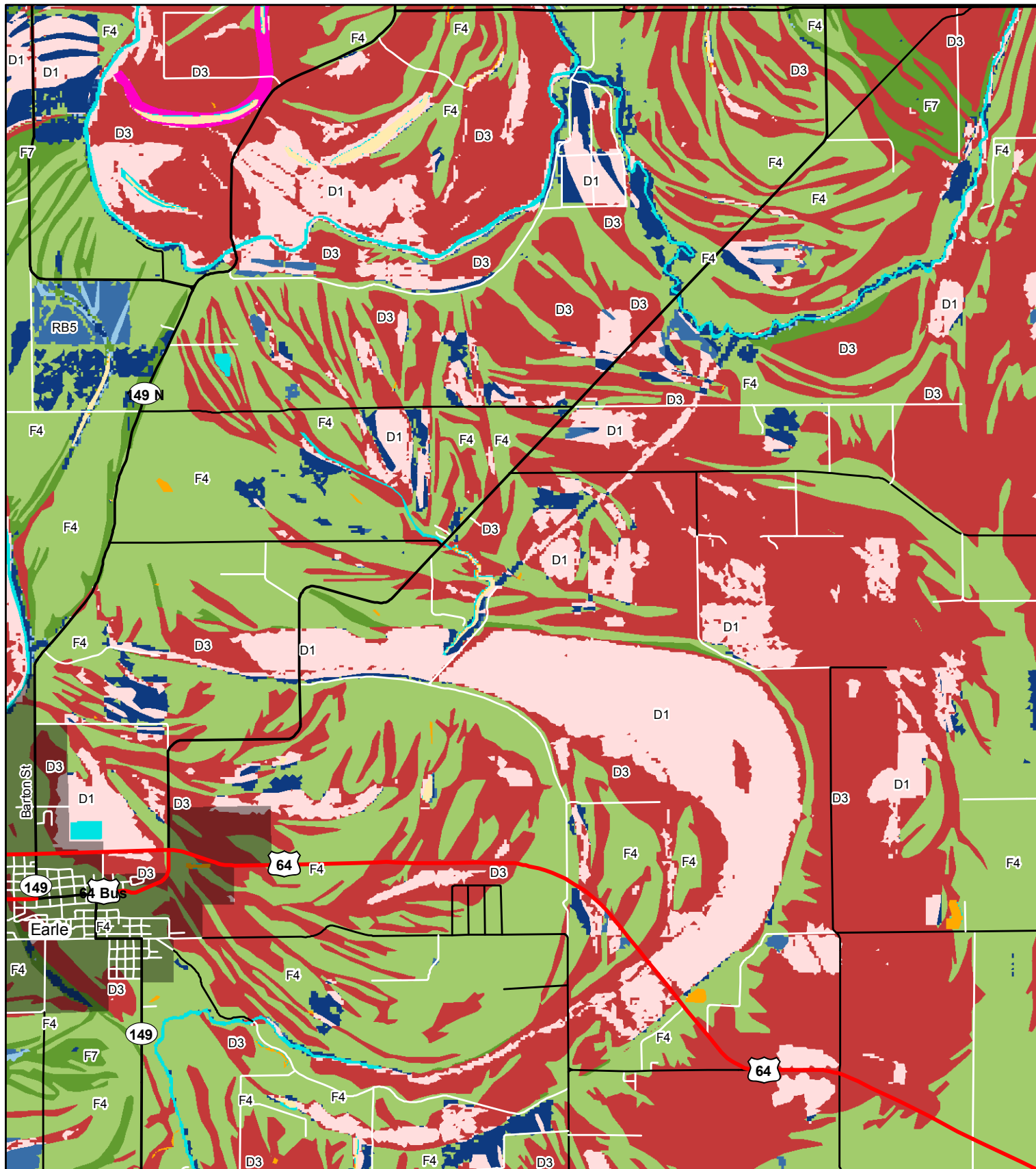
F4

F4

0   0.5   1   2   3   4
                                        Miles

J15

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Clarkedale

J16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

F4
D3
F4
F4
D3
D1
D1
D3
D3
F4
F4
Clarkedale
F4
D1
F4
D3
D1
F7
F4
RB5
D1
D3
F4
RB7
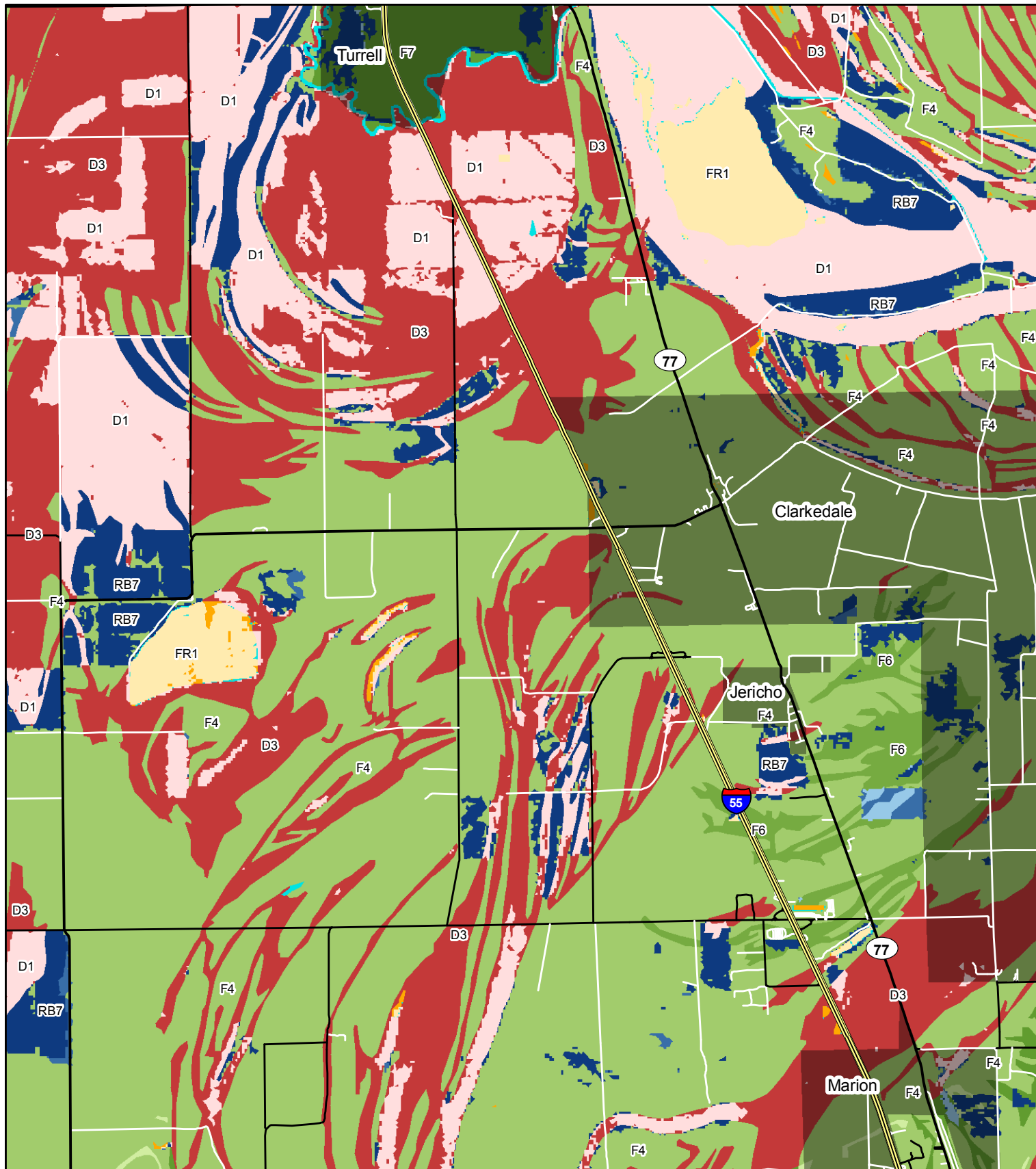
0   0.5   1   2   3   4
Miles

J16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

0   0.5   1   2   3   4
Miles

N

K12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
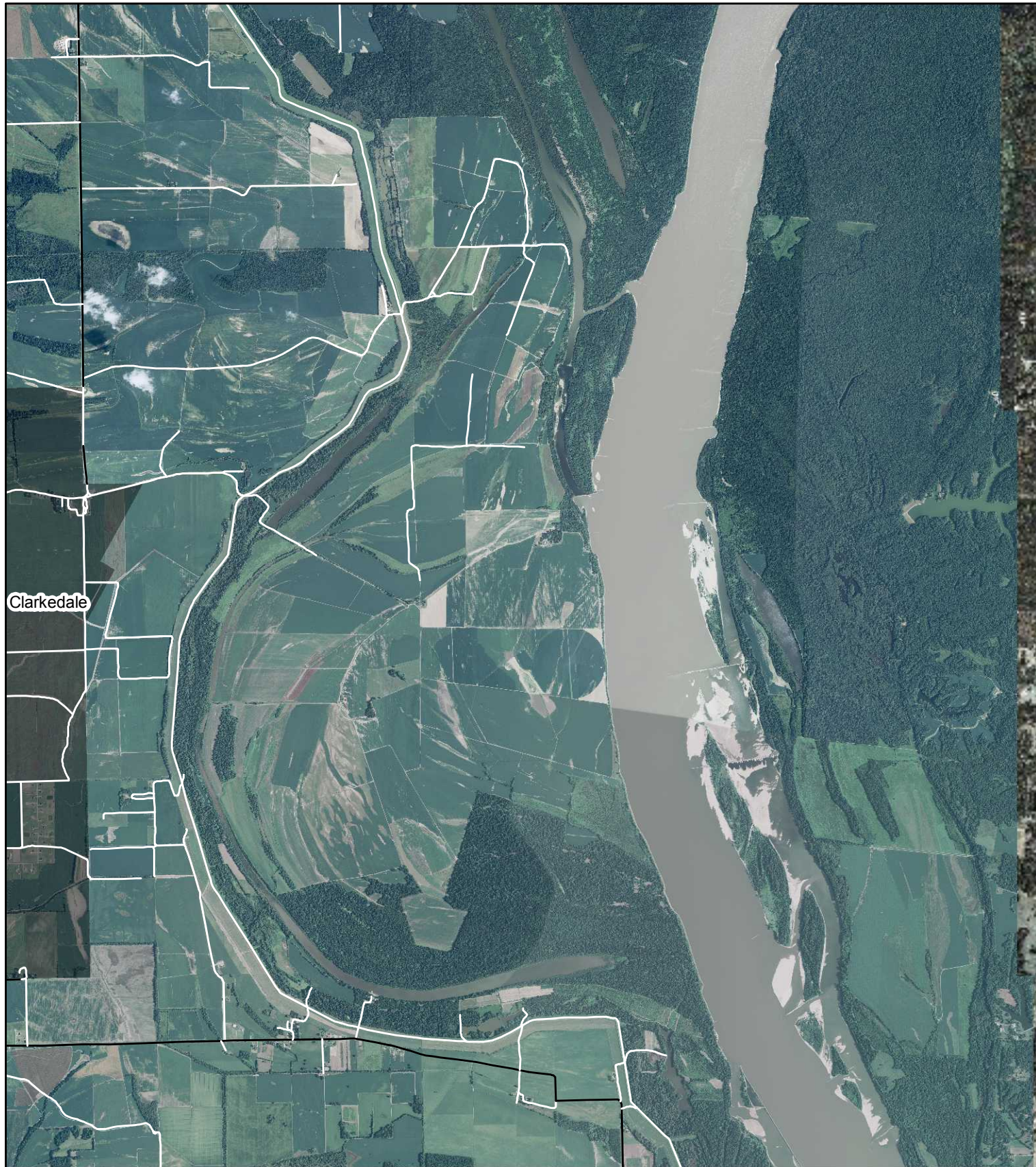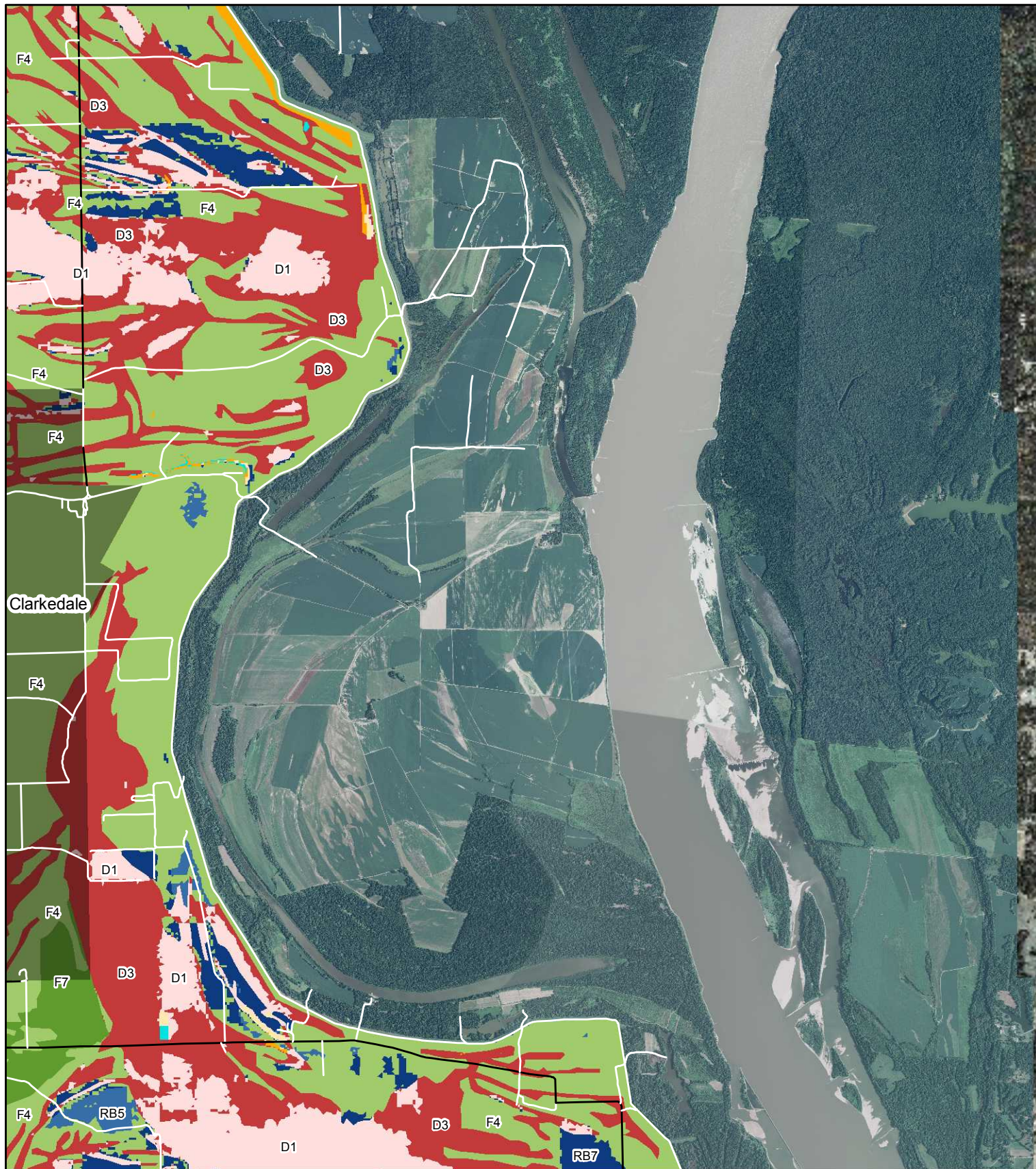Datum: North American 1983

64

F7 F7
F7 F4 F6
F6
RB2 RB7
RB5

F6 F6
F6 F6 D1
F6 F6
RB7 F4 RB7
F4
F7
RB7
RB7
F7 F4
F4
RB7
D3
F4
D3
RB7
F4
F4 D3
RB7
F4
F4
F4

F6
F6 F4
F4
RB7
RB7
F4
F7 F4

D1
D3
D1
D1
D3
D1
D1
D1

RB7
F4
F4

0   0.5   1   2   3   4
Miles

K12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Parkin

75

149

I-40 70

Hwy 70 E

K13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983
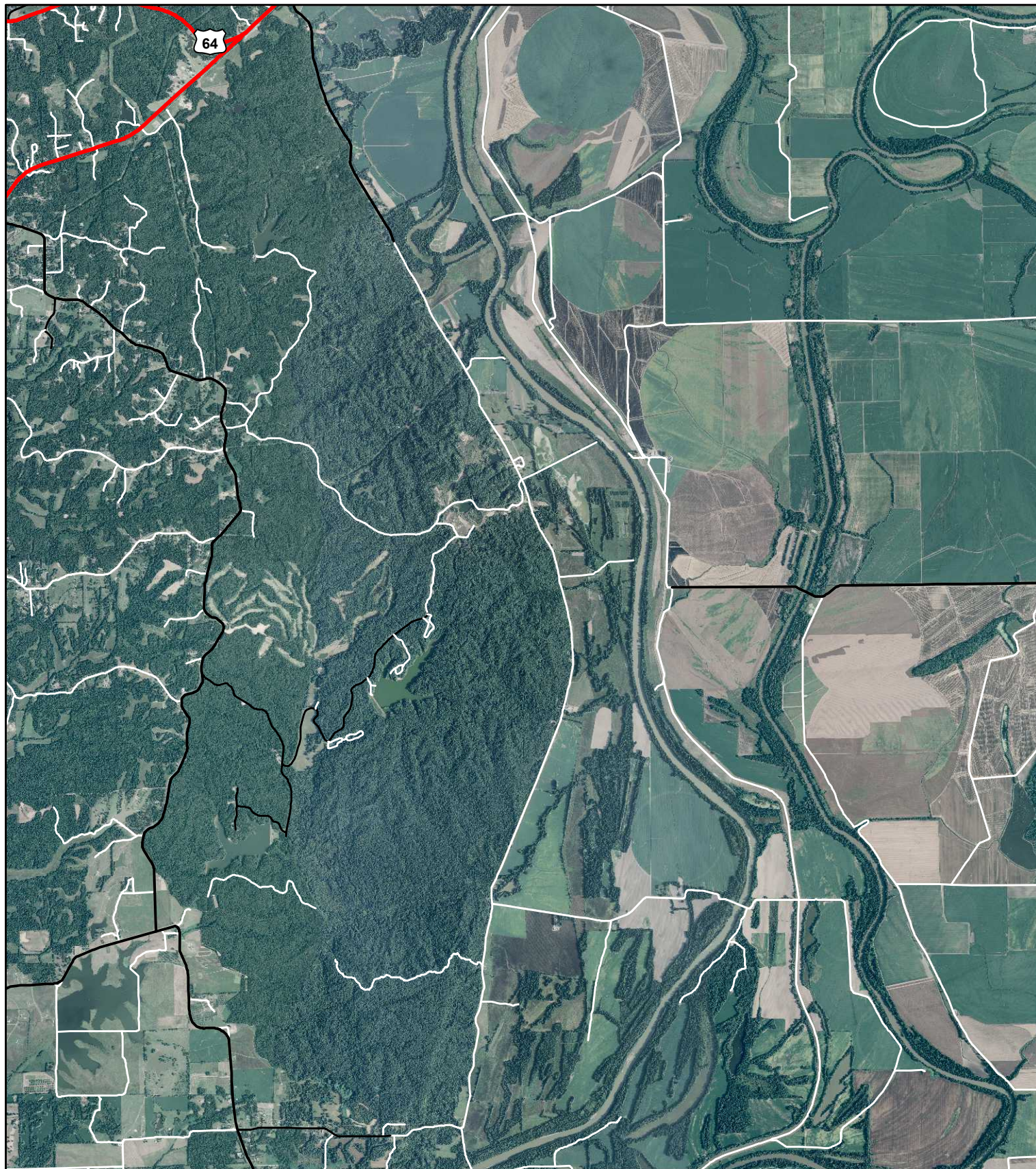
N

Parkin

75

149

40 70

Hwy-70 E

0   0.5   1   2   3   4
Miles

K13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

149

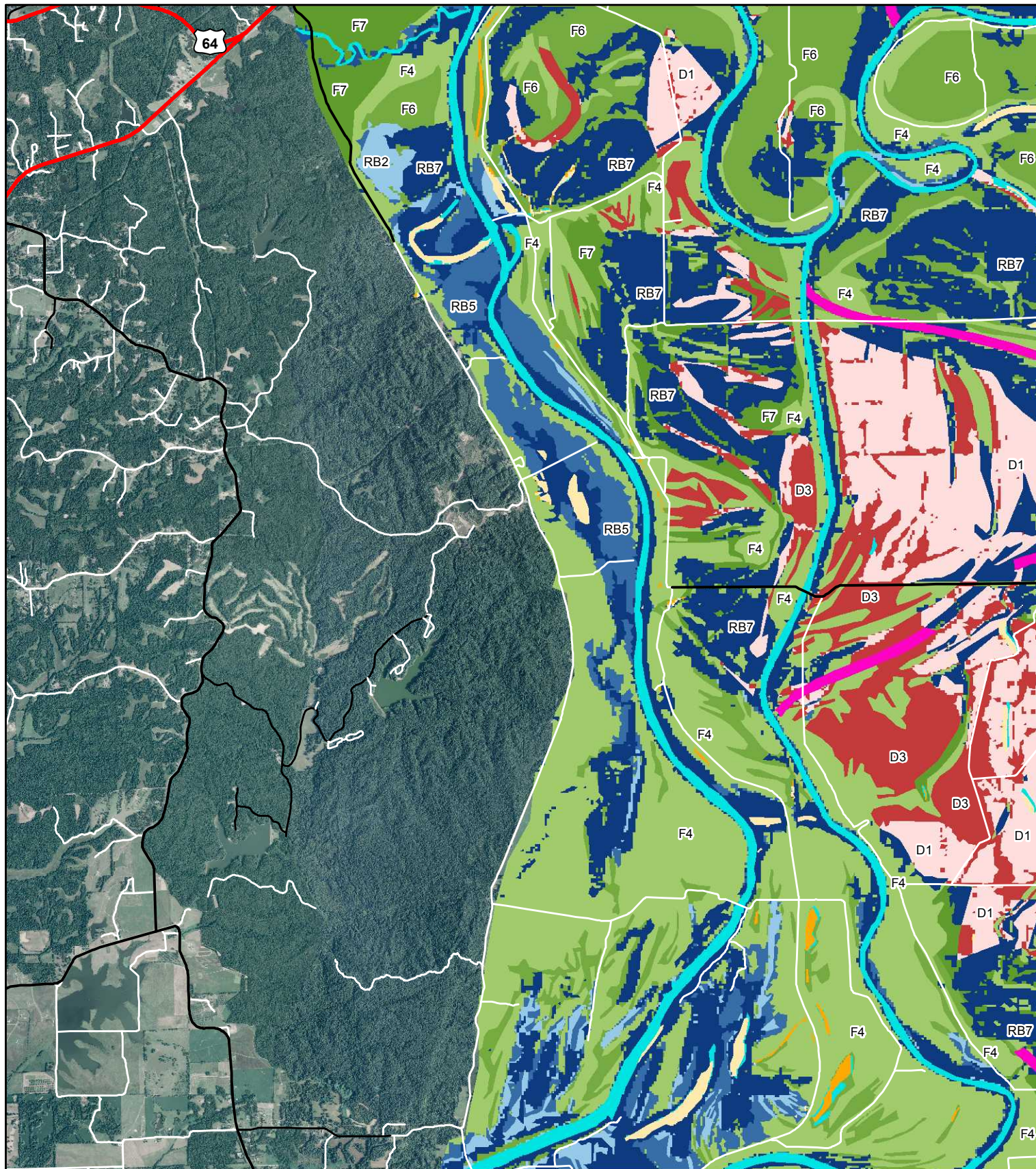Jennette

Hwy 70 E E Hwy 70

Hwy 79 S

40 70

70

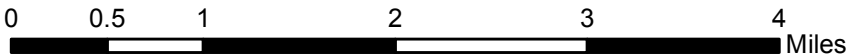79

0   0.5   1   2   3   4
Miles

K14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Crawfordsville

Sunset

77

55

55

Old Military Rd

64

Marion

West Memphis

W Broadway Ave

40 70

55

Edmondson

0	0.5	1	2	3	4

Miles

K15

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Crawfordsville

F4
F2
F2
F2

F4

F4

F7

RB2

RB2

RB2

Edmondson

D3

F4

F4

F4

RB7

D3

D3

RB2

RB2

Marion

F4

RB7

West Memphis

W Broadway Ave

F7

RB7

D3

D3

D3

D1

D3

D1

D3

D3

F4

F4

D3

Sunset

F7

RB7

F4

Old Military Rd

F4
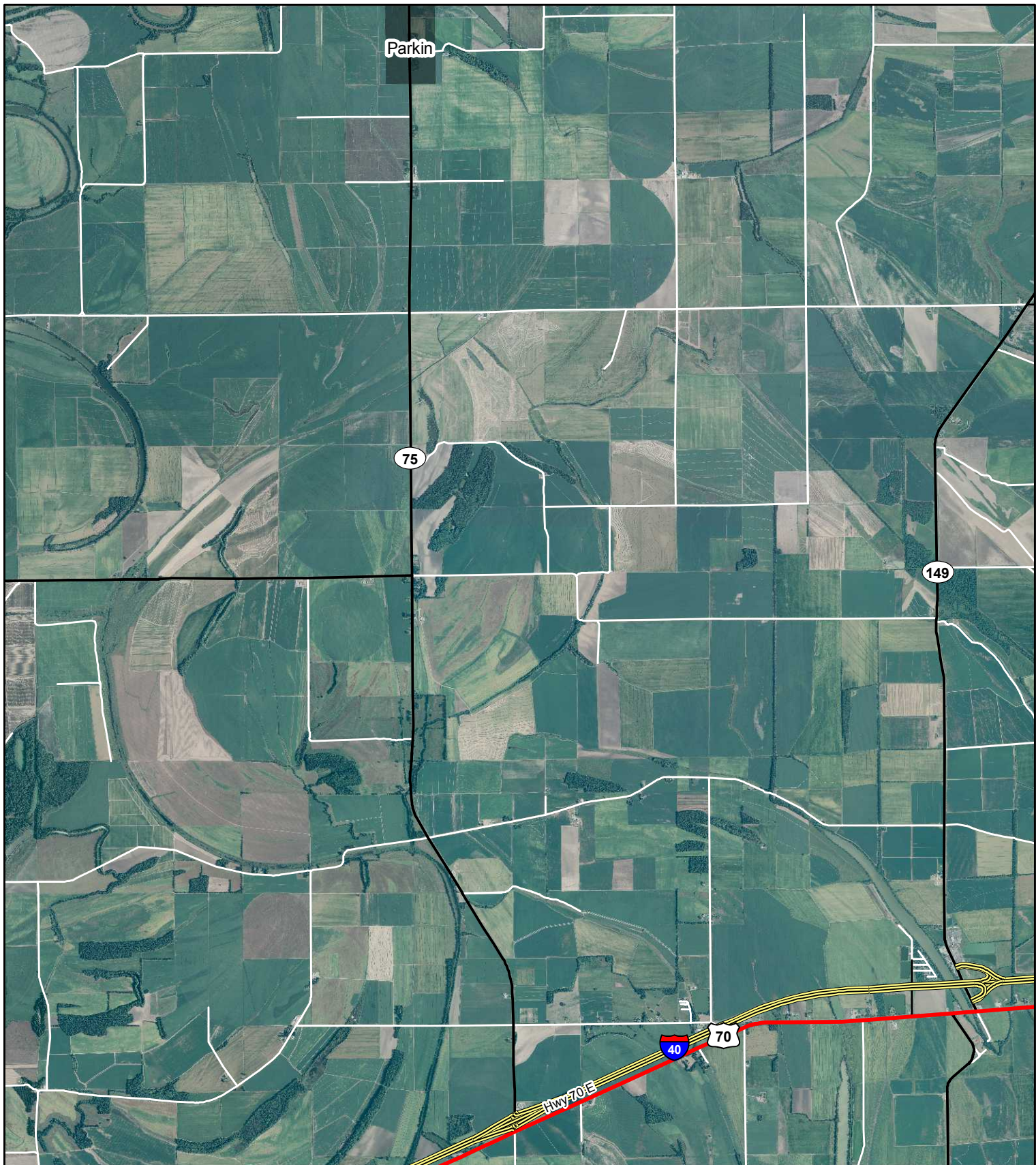
FR2

D3

D3

F4

77

55

55

55

64

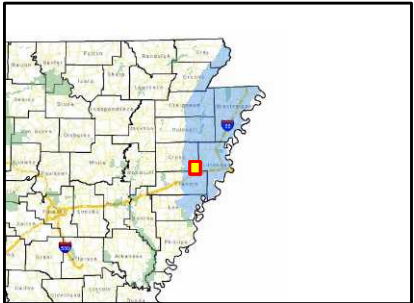40

70

0   0.5   1   2   3   4
Miles

K15

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983
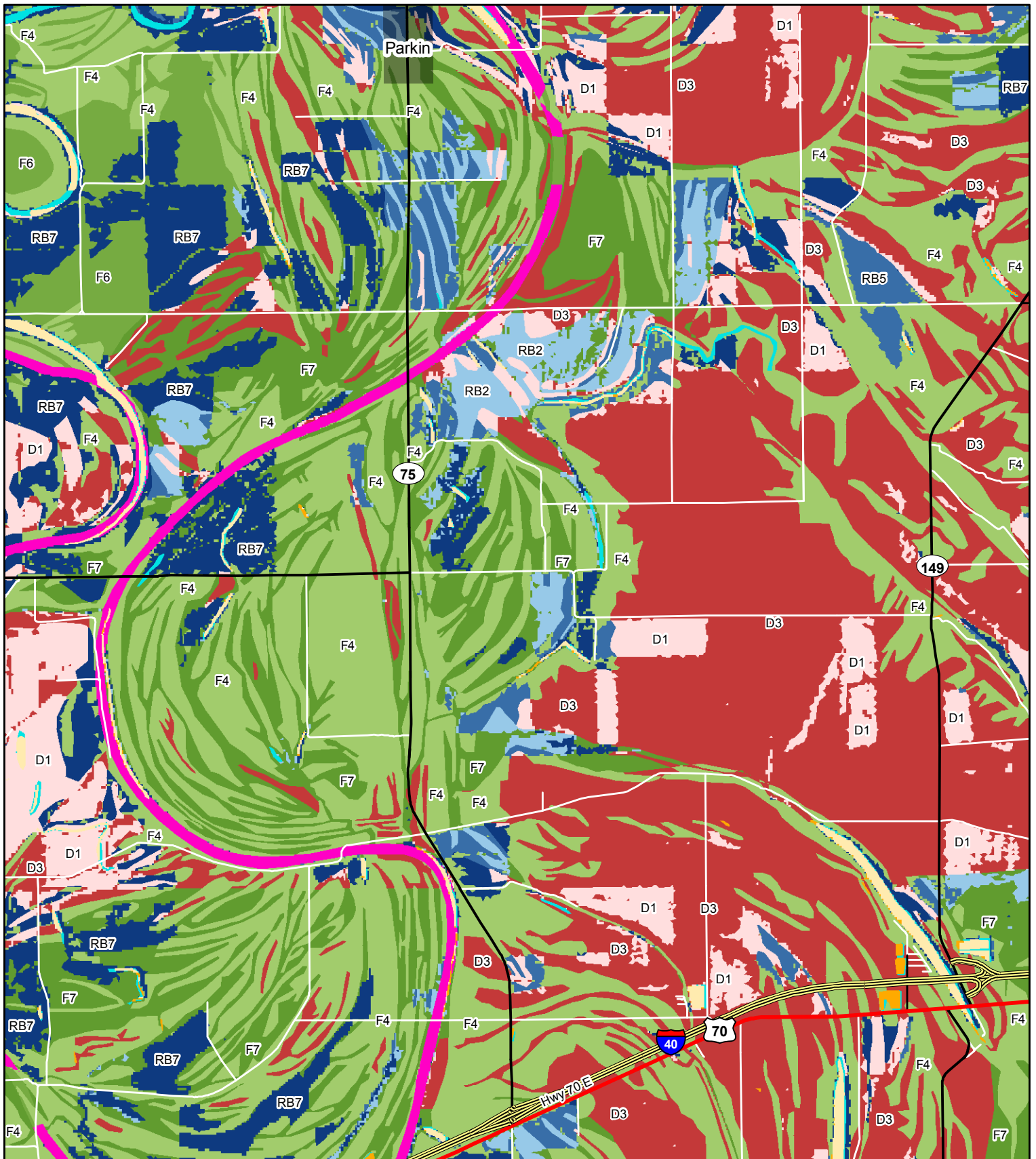
N

Marion

77

77

I-55

West Memphis

I-40

E Broadway E Broadway Ave   70

70

I-55

K16

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Marion

77

77
I-55
West Memphis
I-40

RB5
F4
F4
F4
D1
D3
F4
F4
D1
D1
D3
D1
D1
D3
D1
D1
F4
RB7
D3
F4
RB7
RB7
F7
RB7
F6
E Broadway E Broadway Ave
70
F4
F4
D3
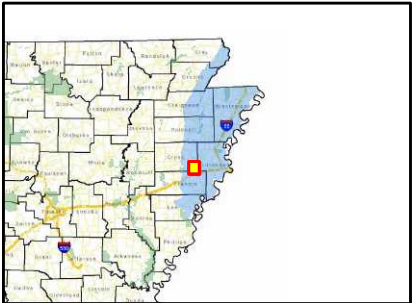F4
D3
D3
F4
D3
D1
D3
I-55

0   0.5   1   2   3   4
Miles

K16

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Hwy 70 E

70

I-40

Hwy 70 E

70

Widener

70

Madison

Forrest City

70

0   0.5   1   2   3   4
Miles

L12

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

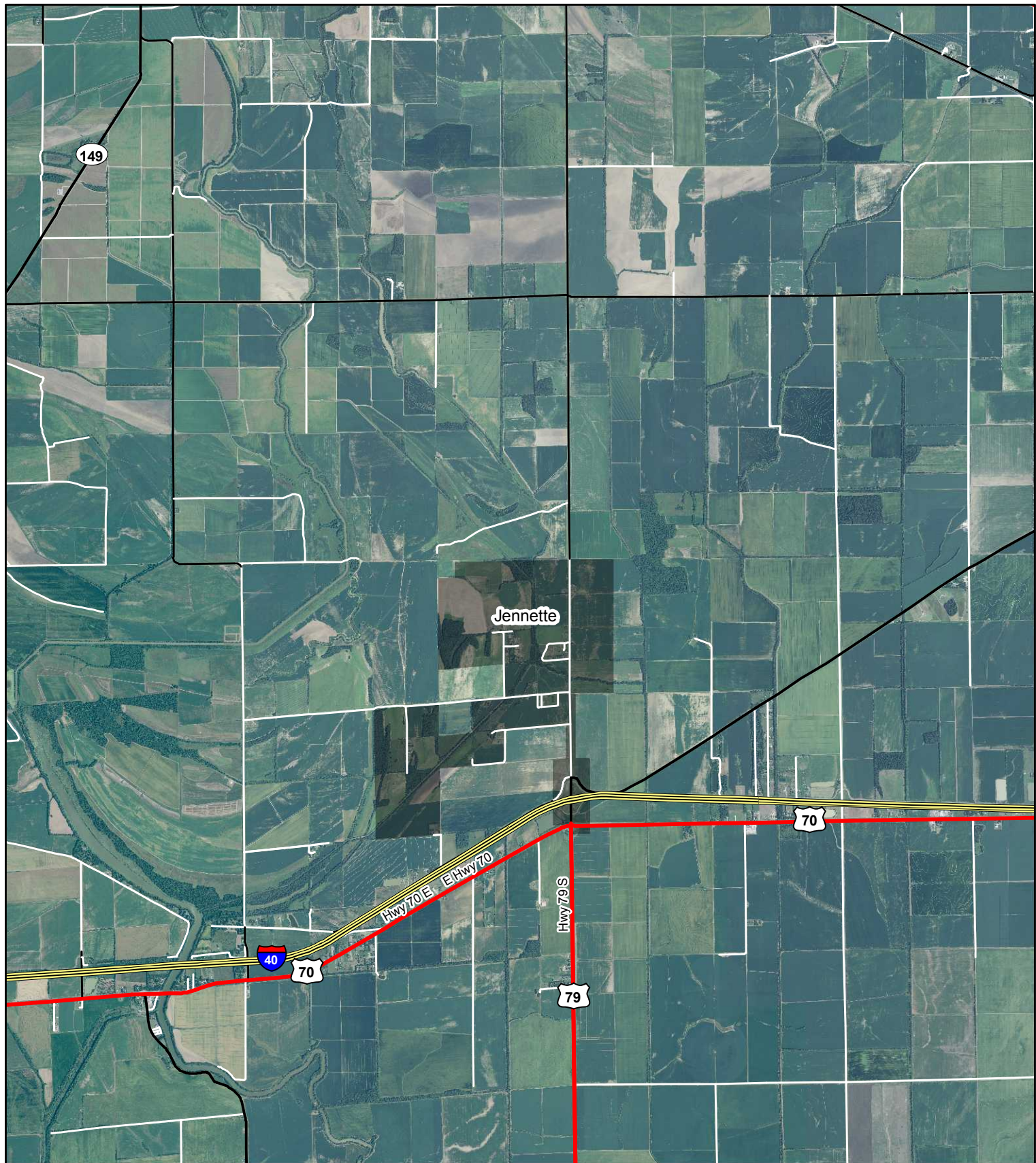Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

L12

0   0.5   1   2   3   4
                                              Miles

L13

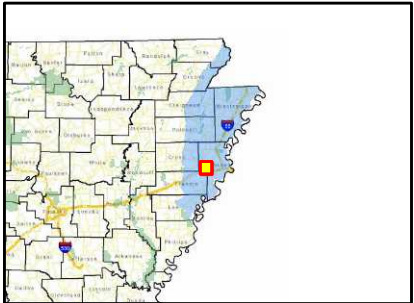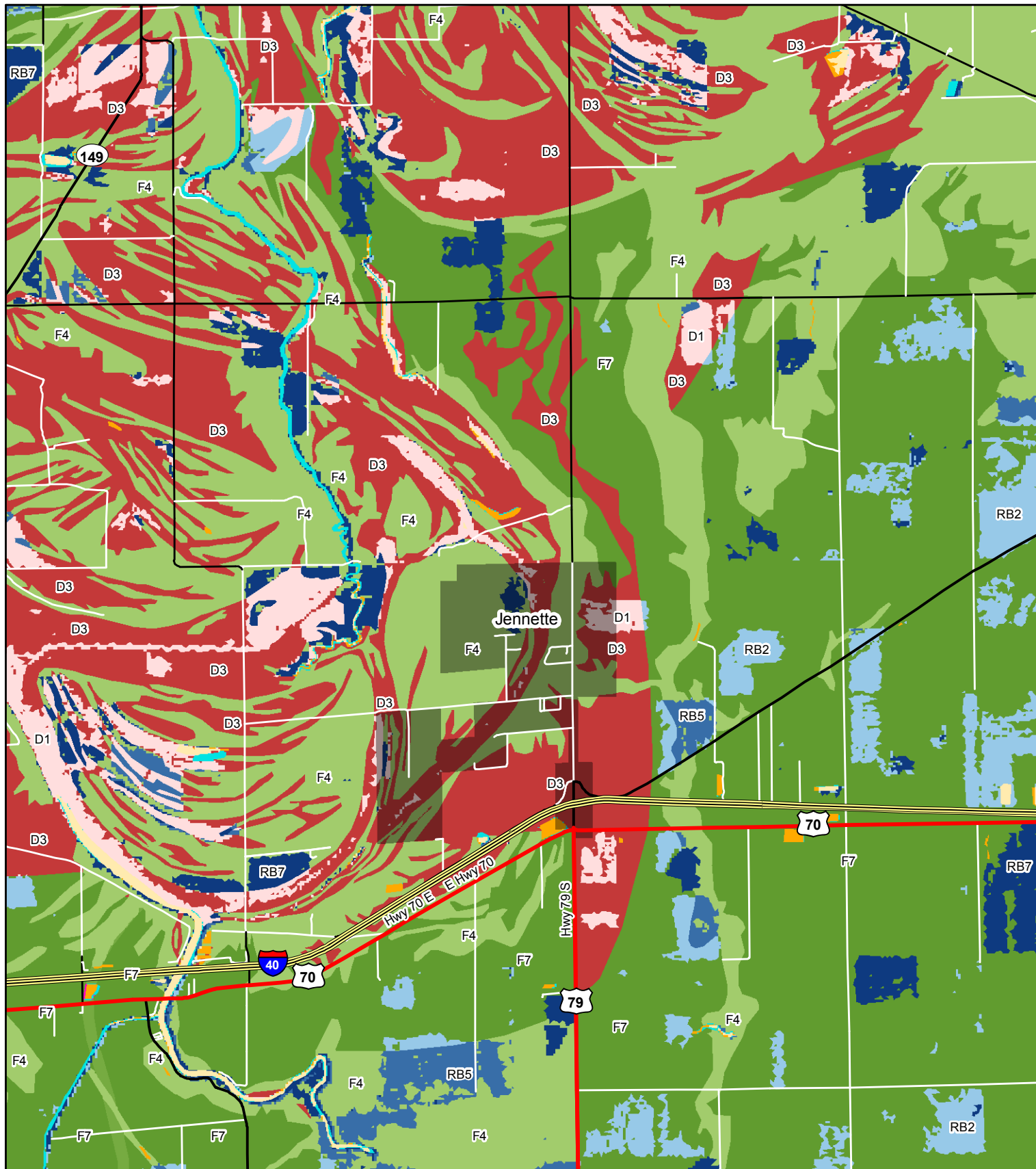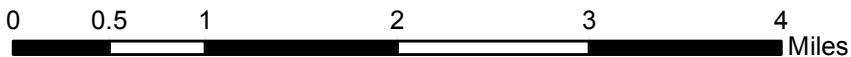Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

L13

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

0   0.5   1   2   3   4
Miles

N

79

Hwy 79 S

Anthonyville

Hwy 79 S

0   0.5   1   2   3   4
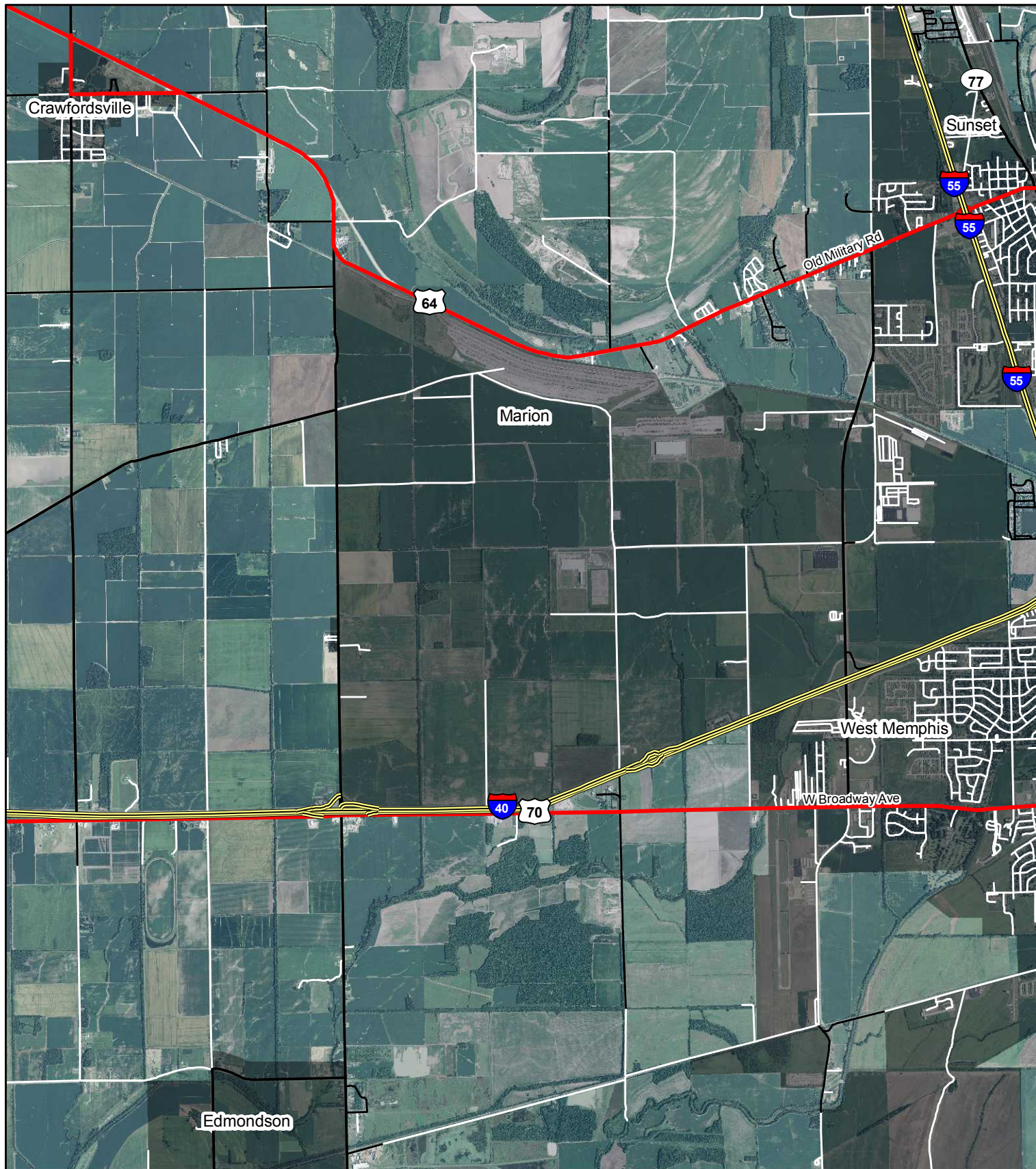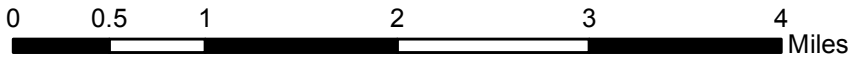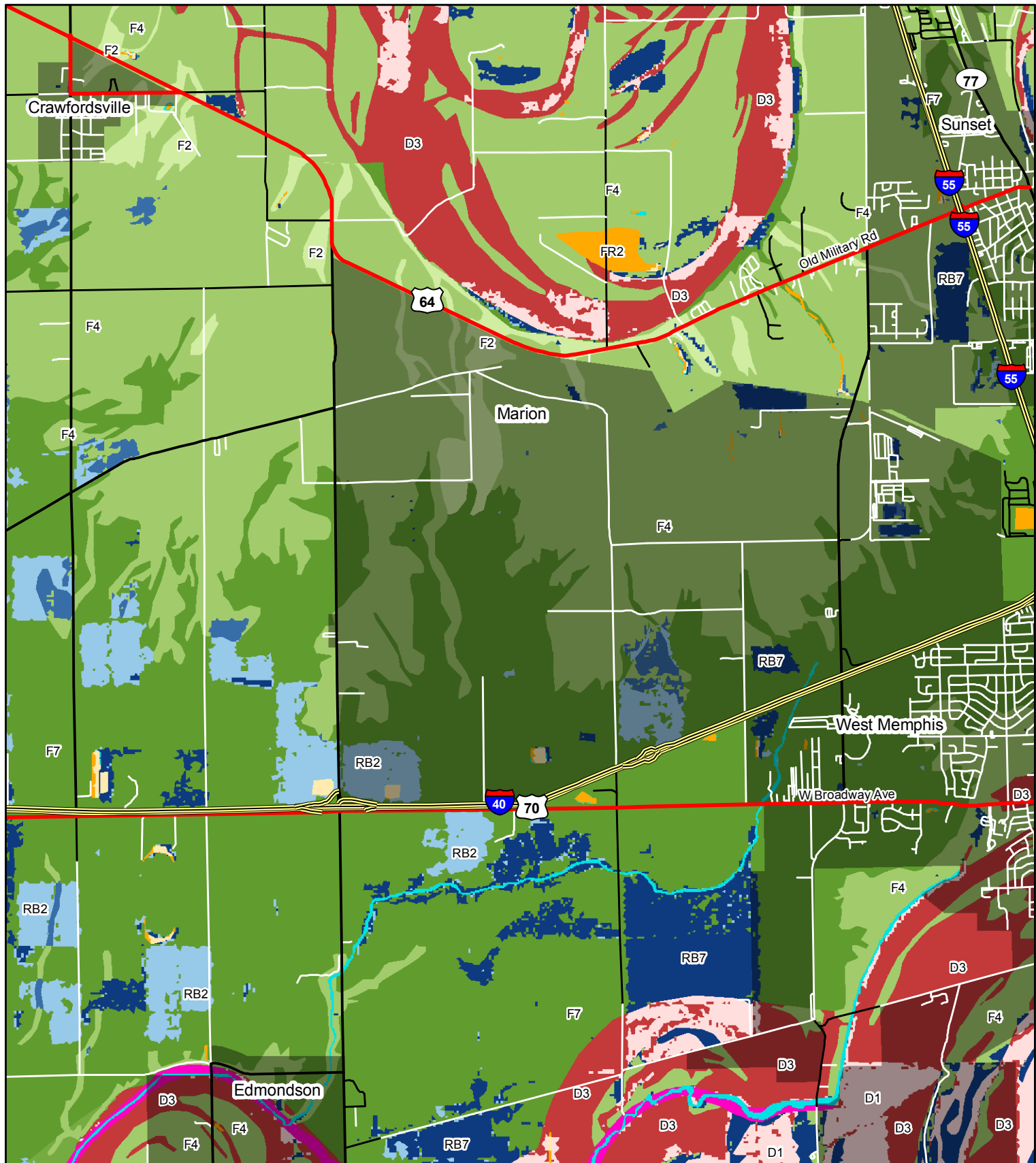   Miles

L14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

L14

0 0.5 1 2 3 4 Miles

N

West Memphis

Edmondson

Anthonyville

0   0.5   1   2   3   4
Miles

L15

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

West Memphis

D1

D3

D3

D3

D1

F4

RB7

D3

F4

D1

D3

D3

F6

Edmondson

D3

D3

D3

D1

RB7

D3

D1

D1

RB7

F4

F4

D3

D3

RB7

D1

RB7

F4

F4

D1

D3

RB7

F4

Anthonyville

D1

D3

F4

F4

F4

0   0.5   1   2   3   4
Miles

L15

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

West Memphis

L16

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

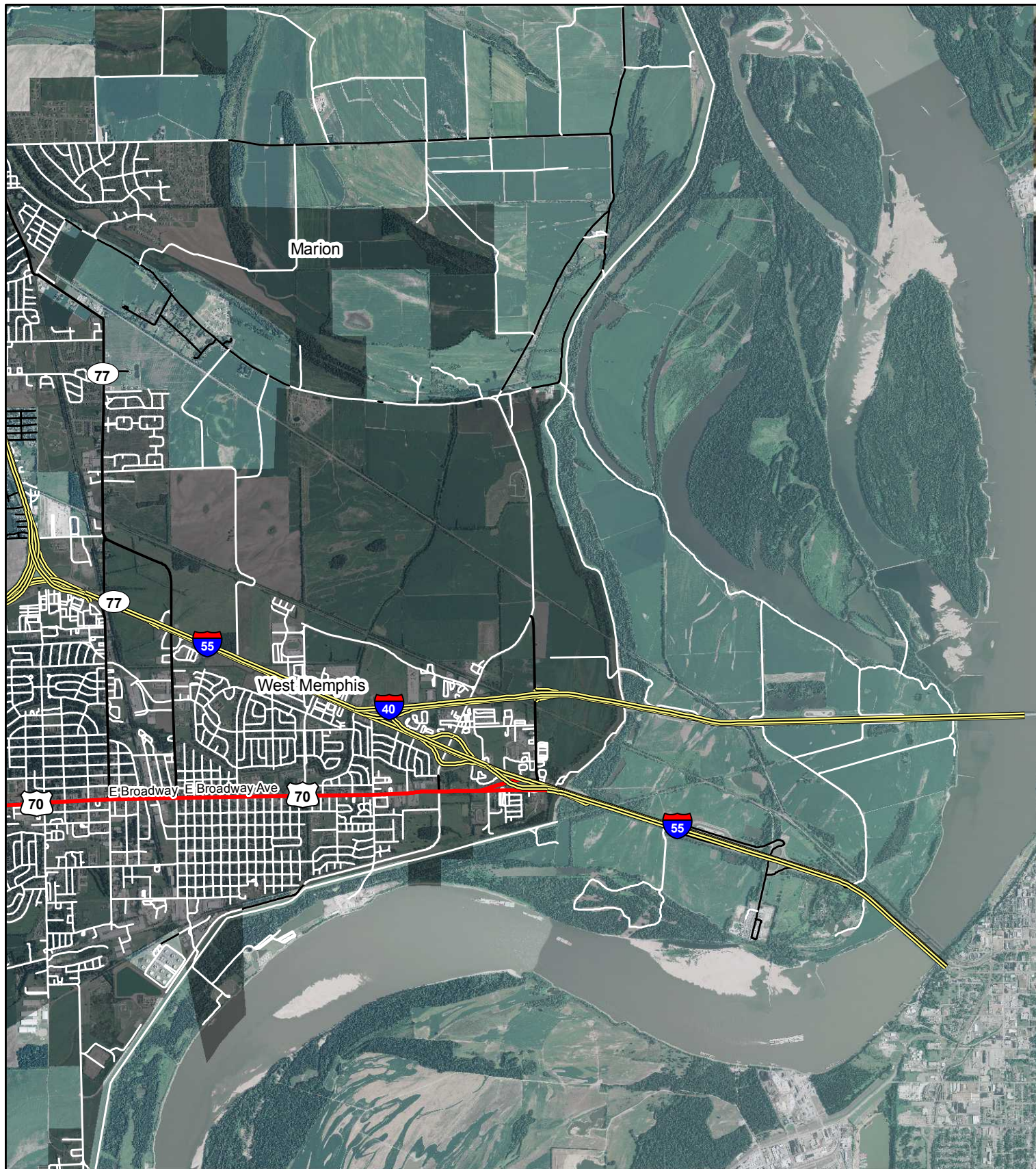0   0.5   1   2   3   4
Miles

L16

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

0   0.5   1   2   3   4
Miles

N

Coordinate System: NAD 1983 UTM Zone 15N
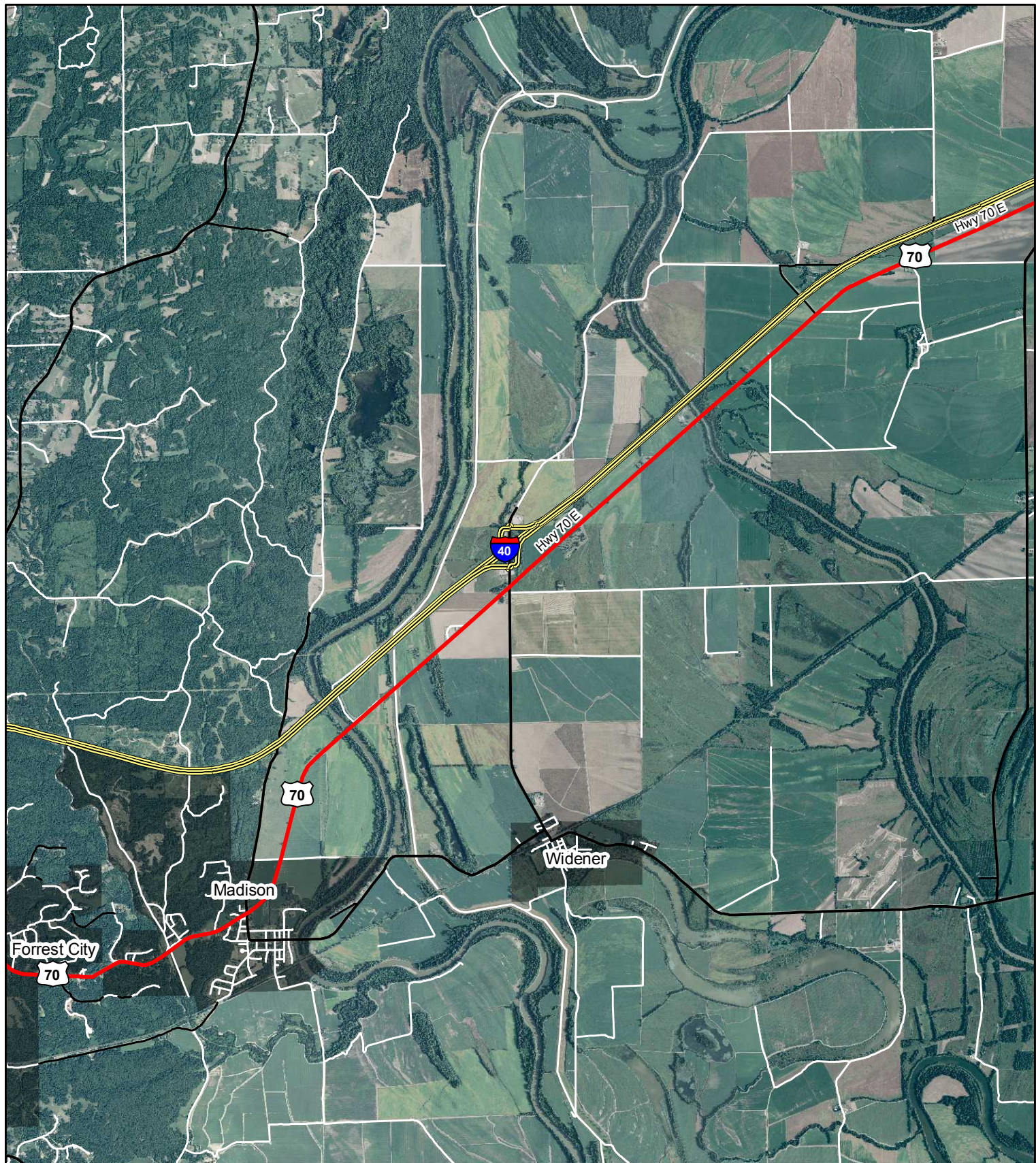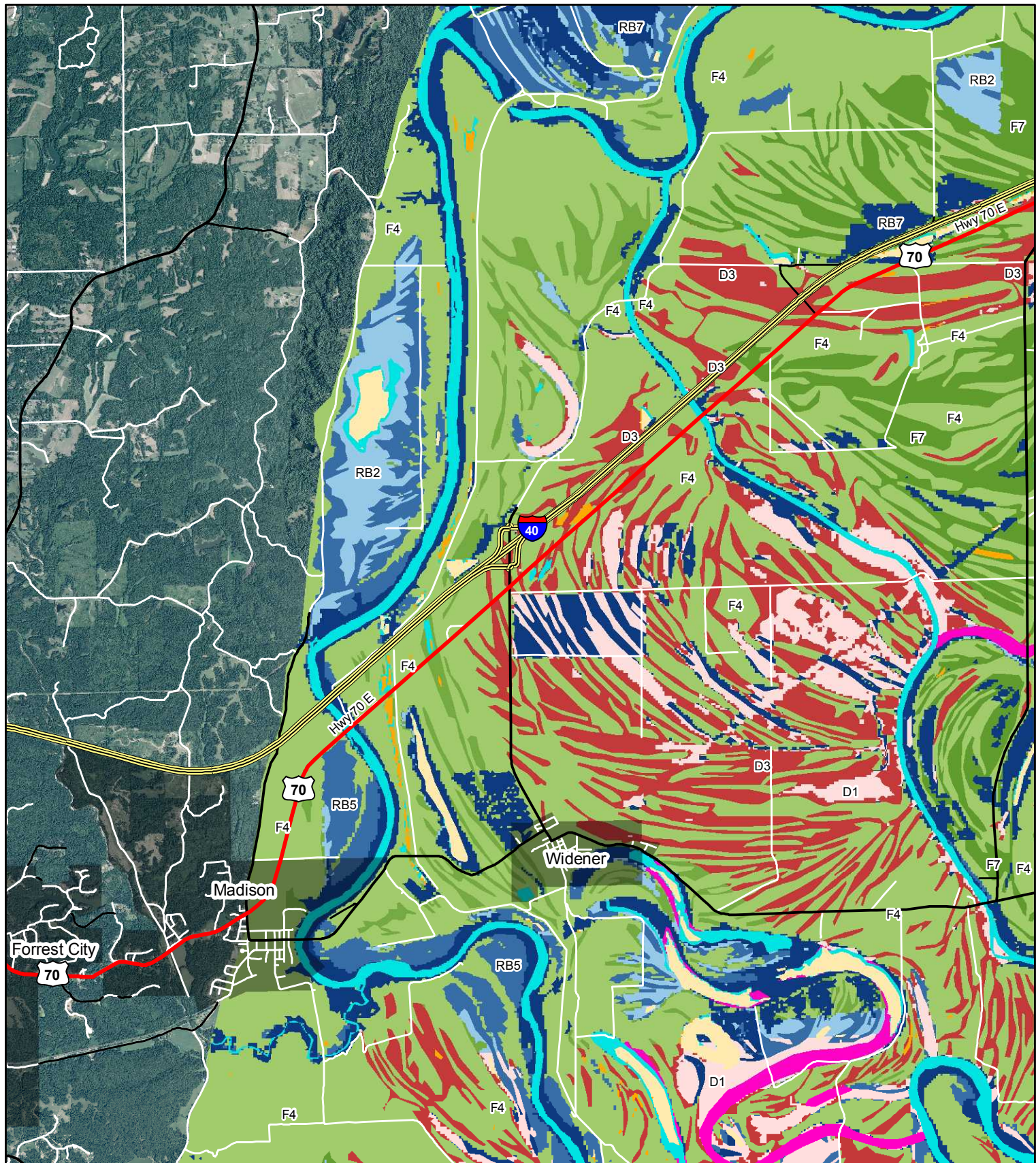Projection: Transverse Mercator
Datum: North American 1983

Map Labels

RB2, F4, F4, F4, F4, D1, F7, RB7, RB7, D3, D1, D3, D1, D1, F4, D3, RB7, F4, F4, D1, RB5, D1, RB7, F4, F4, F4, F4, RB5, D1, D1, F4, F4, D3, RB7, D1, D3, D3, F4, RB2, F4, RB7, F4, RB5, RB7, RB7, D1, RB5, F4

0   0.5   1   2   3   4
Miles

M12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Hughes

Hwy 79 S

Hwy 79 N

79

334
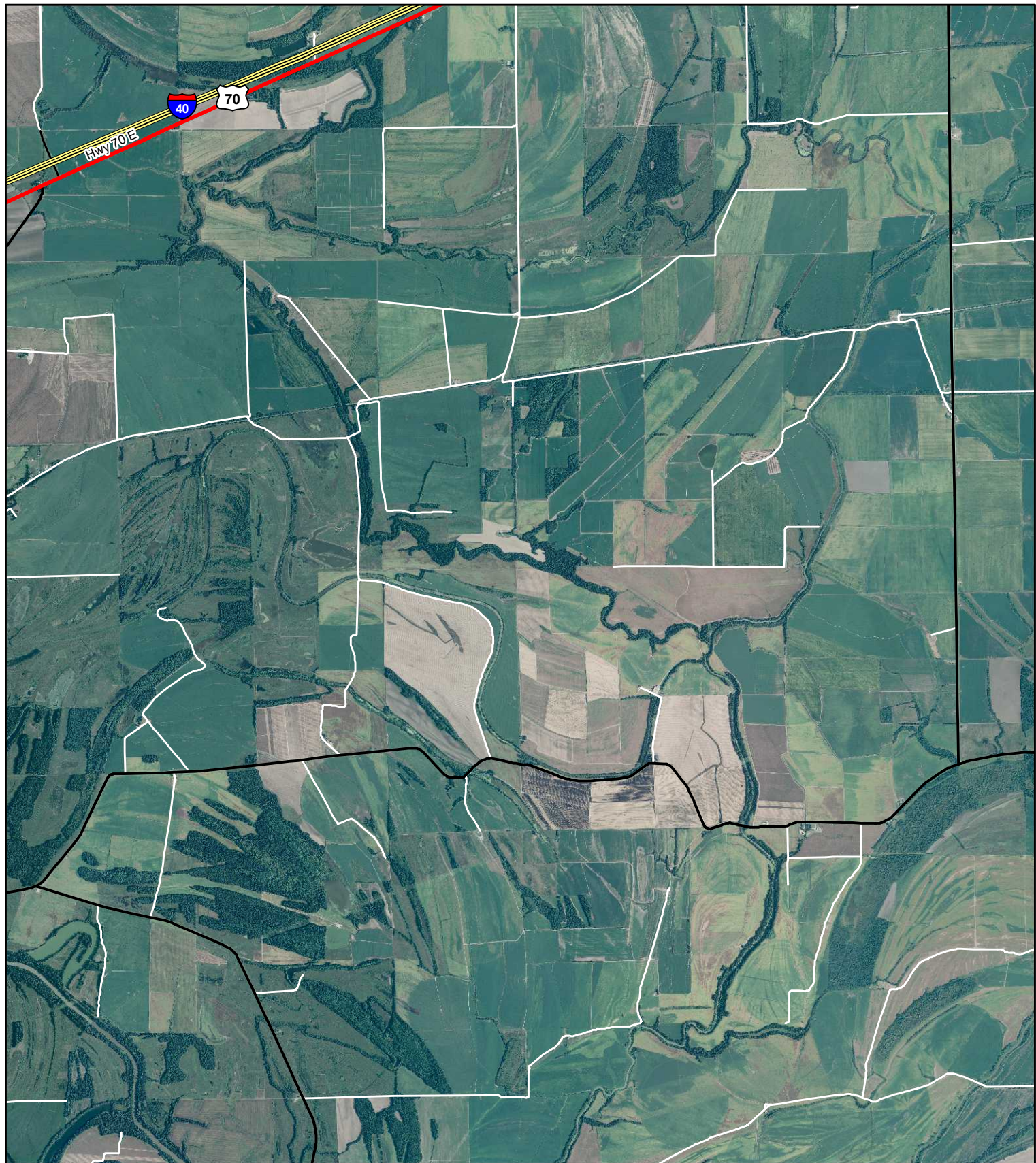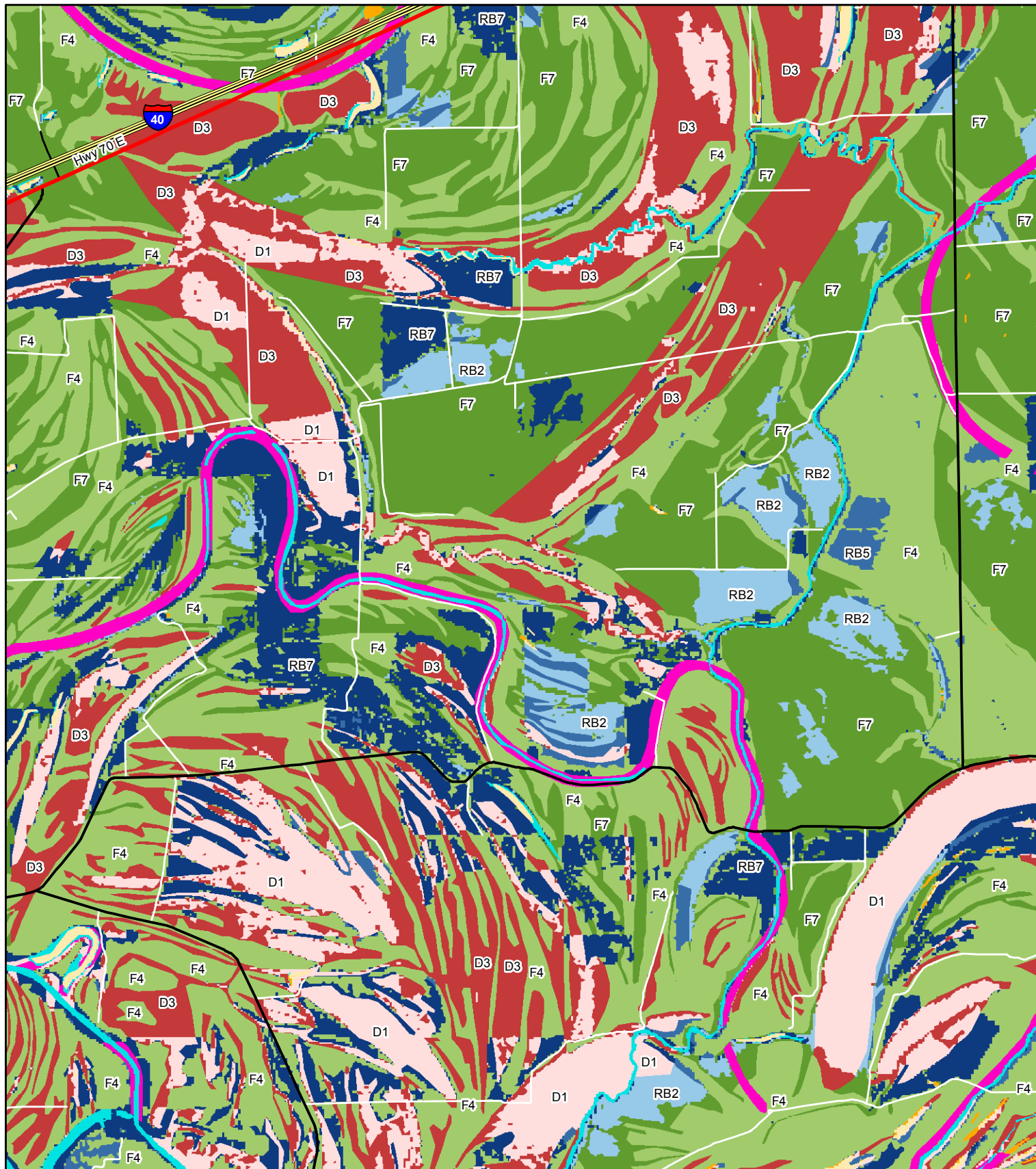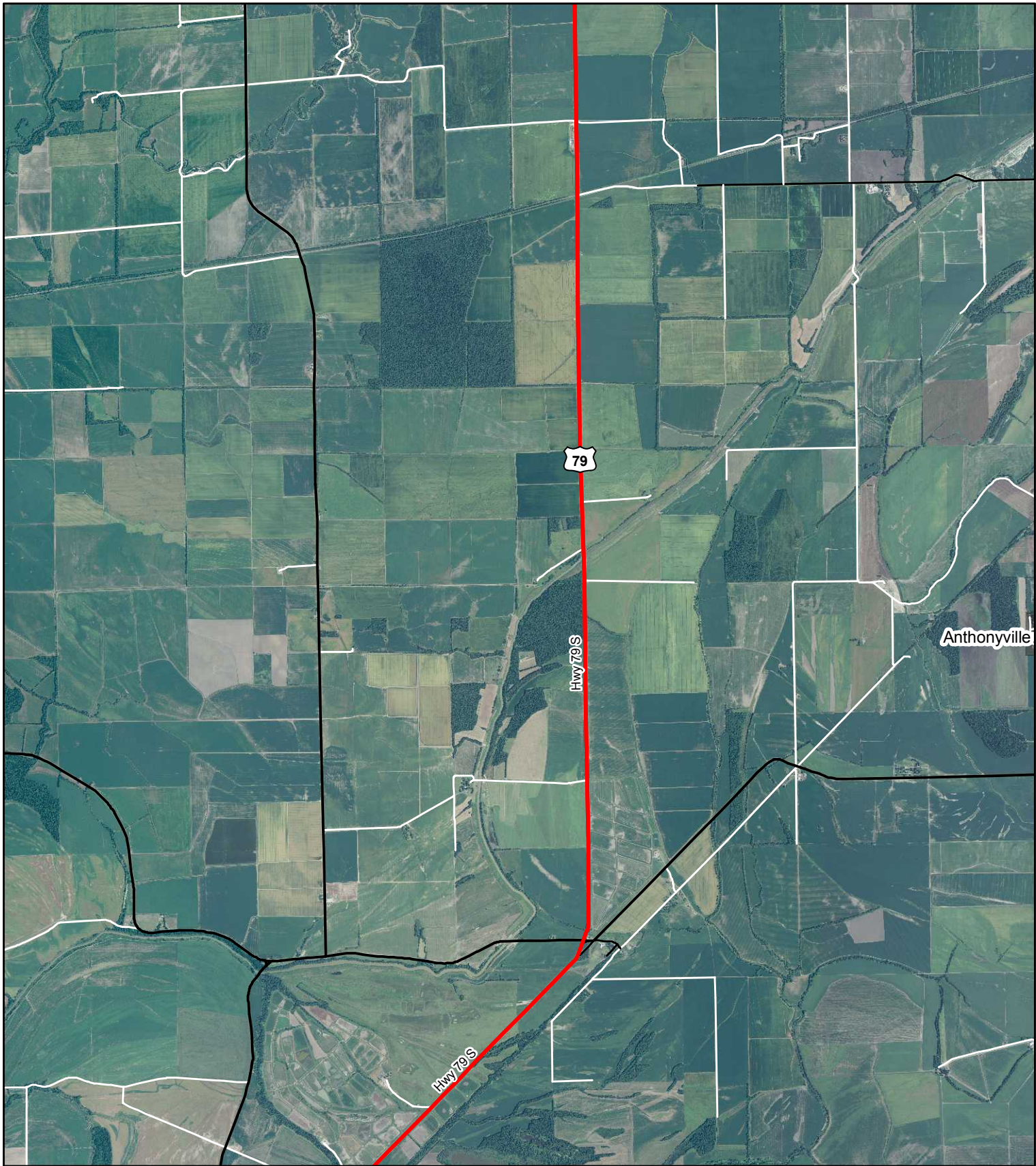
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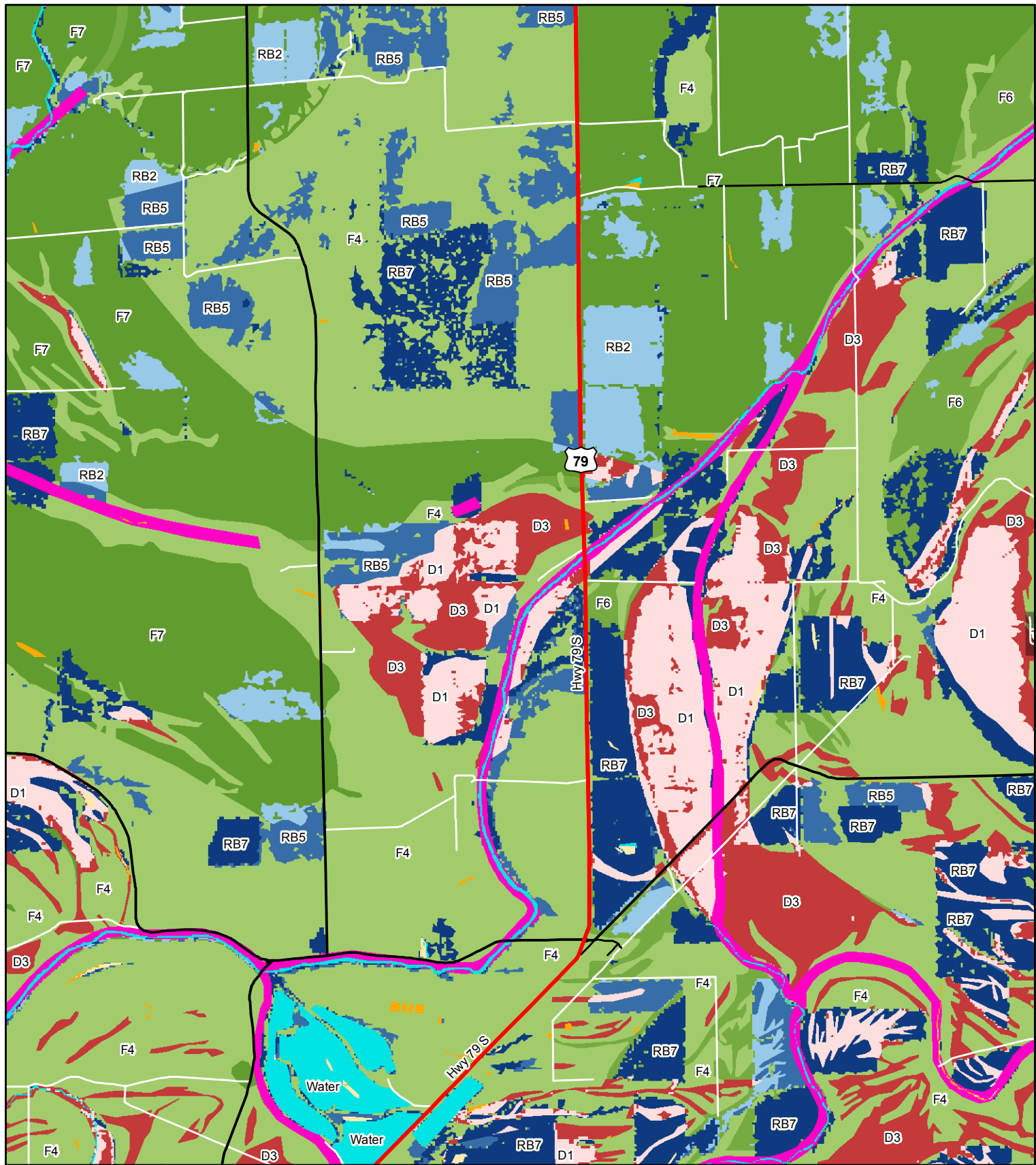   Miles

M13

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

M13

0   0.5   1   2   3   4
Miles

N

79

Hwy 79 S

79

Hwy 79 S

Hughes

0   0.5   1   2   3   4
Miles

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

M14

N

Hwy 79 S

79

79

Hwy 79 S

Hughes

F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
F4
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D3
D3
D3
D3
D3
D3
D3
D3

D1
D1
D1
D1
D1
D1
D1

RB7
RB7
RB7
RB7
RB7
RB7
RB7
RB7

FR1
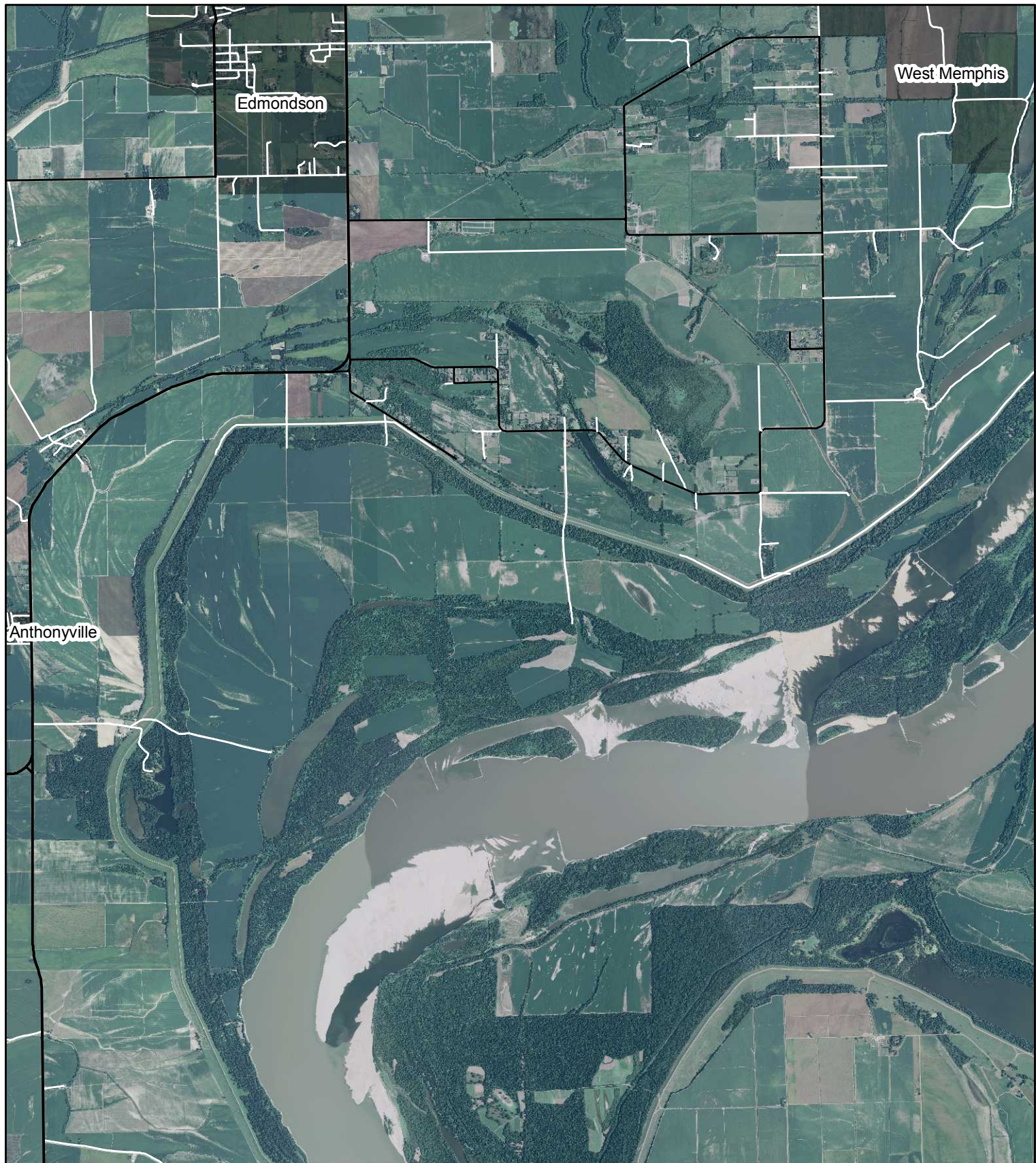
0   0.5   1   2   3   4
Miles

M14

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Horseshoe Lake

0   0.5   1   2   3   4
|‾‾‾‾|‾‾‾‾|‾‾‾‾‾‾‾‾‾|‾‾‾‾‾‾‾‾‾|‾‾‾‾‾‾‾‾‾|
                                            Miles

M15

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

D3
RB7
D3
D3
F4
RB7
D3
RB7
F4
D3
D3
D1
D3
F4
FR1
F4
Horseshoe Lake
F4
D3
FR1

0	0.5	1	2	3	4

Miles

M15

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

1

Hwy 1 N

Forrest Ave

Marianna

79

79

Hwy 79 W

79

Hwy 79 W

79

W Chestnut St

79

1 N

1

Hwy 1 S

Hwy 1 S

0   0.5   1   2   3   4
Miles

N11

Coordinate System: NAD 1983 UTM Zone 15N
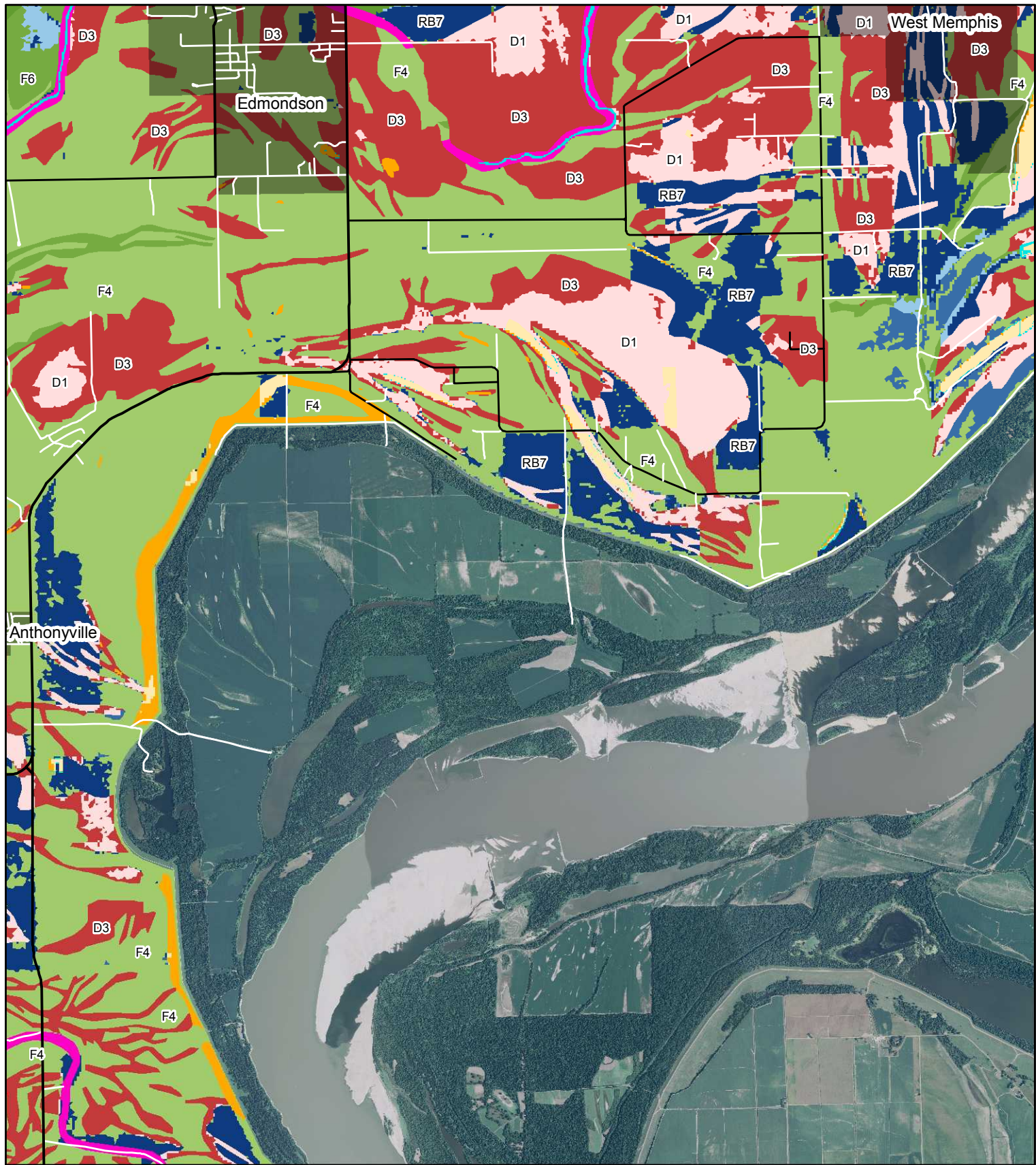Projection: Transverse Mercator
Datum: North American 1983
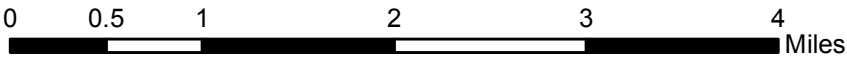
N

RB5

F4

F4

F4

RB5

RB7

RB7

RB7

RB7

F4

Hwy 1 N

1

Forrest Ave

Marianna

79

79

79

Hwy 79 W

Hwy 79 W

W Chestnut St

1 N

1

Hwy 1 S

Hwy 1 S

0   0.5   1   2   3   4
Miles

N12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

Marianna

Hwy 79 N

79

RB5
RB7
D1
RB5
RB5
RB5
RB5
RB5
D1
D3
D1
F4
F4
D1
D3
D1
RB5
F4
D3
RB7
D1
RB5
RB5
RB7
RB5
D3
79
D3
RB5
RB5
RB7
D1
D1
RB5
RB7
RB5
RB7
Hwy 79 N
RB5
D1
D1
RB7
F4
RB7
D1
RB7
RB5
F4
Marianna
RB7
RB5
D1
RB7
F4
RB5
RB7
RB5
RB7
RB5

F4
D1
D1
D3
D1
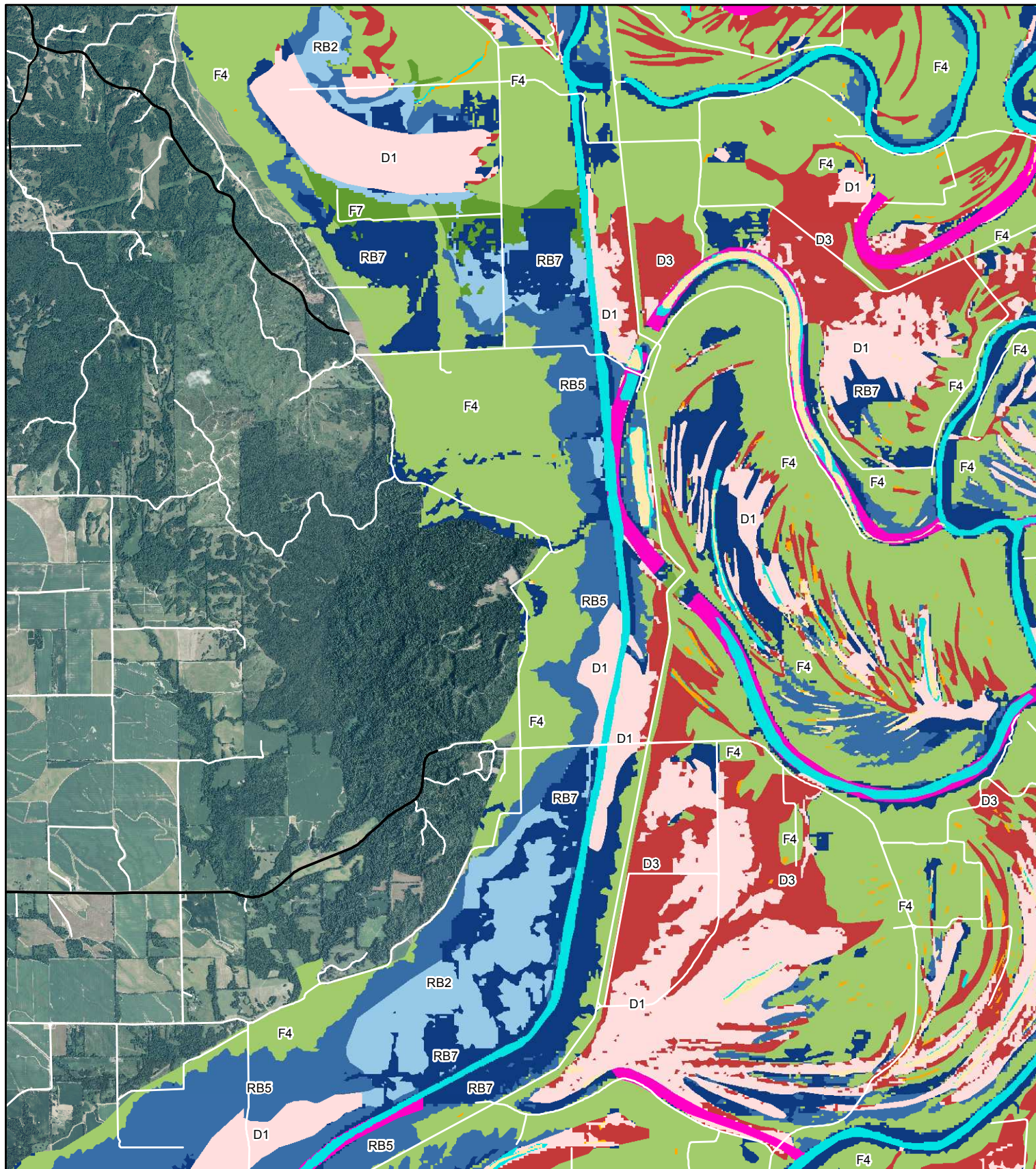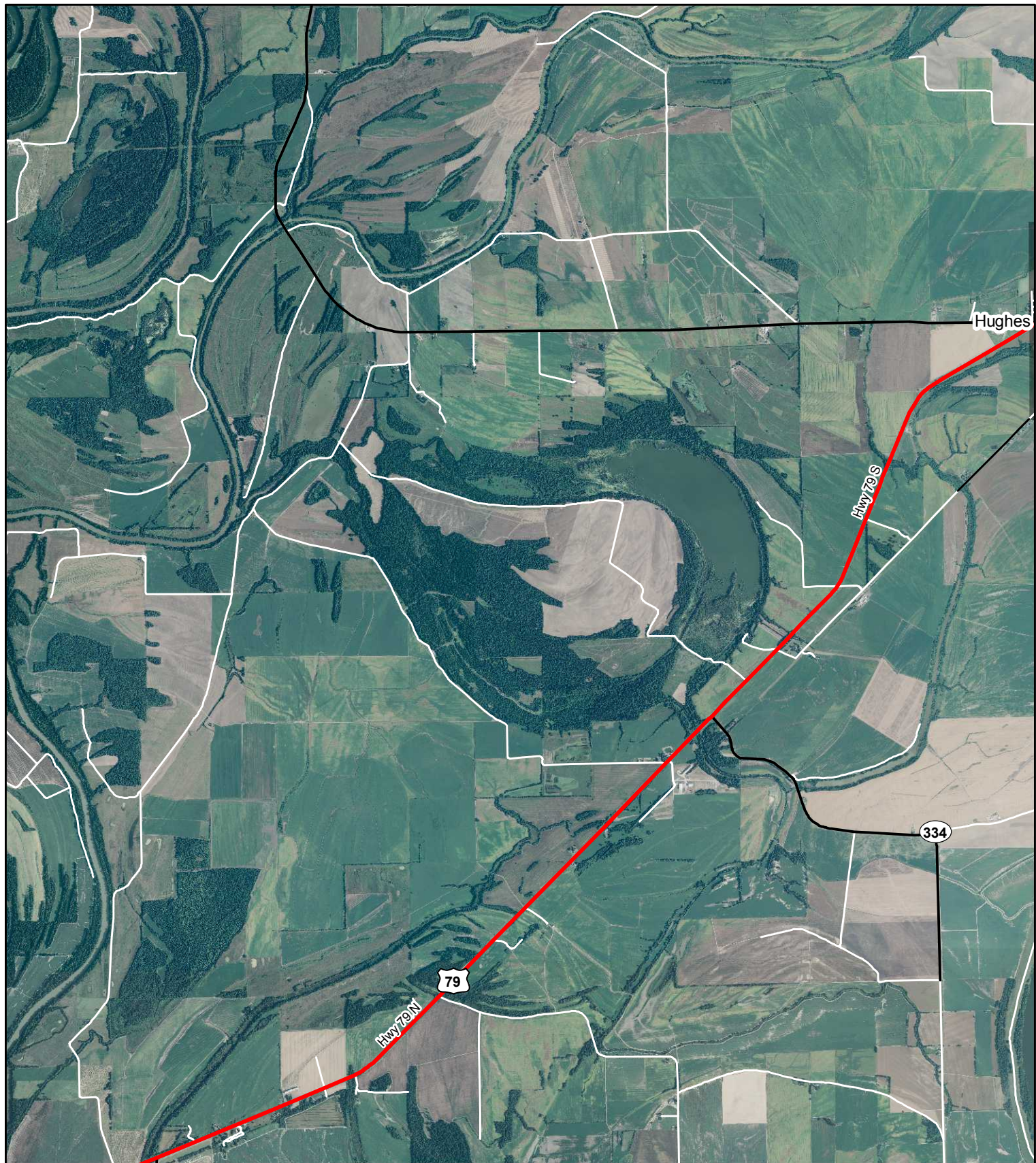
0   0.5   1   2   3   4
Miles

N12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

0   0.5   1   2   3   4

Miles

N13

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
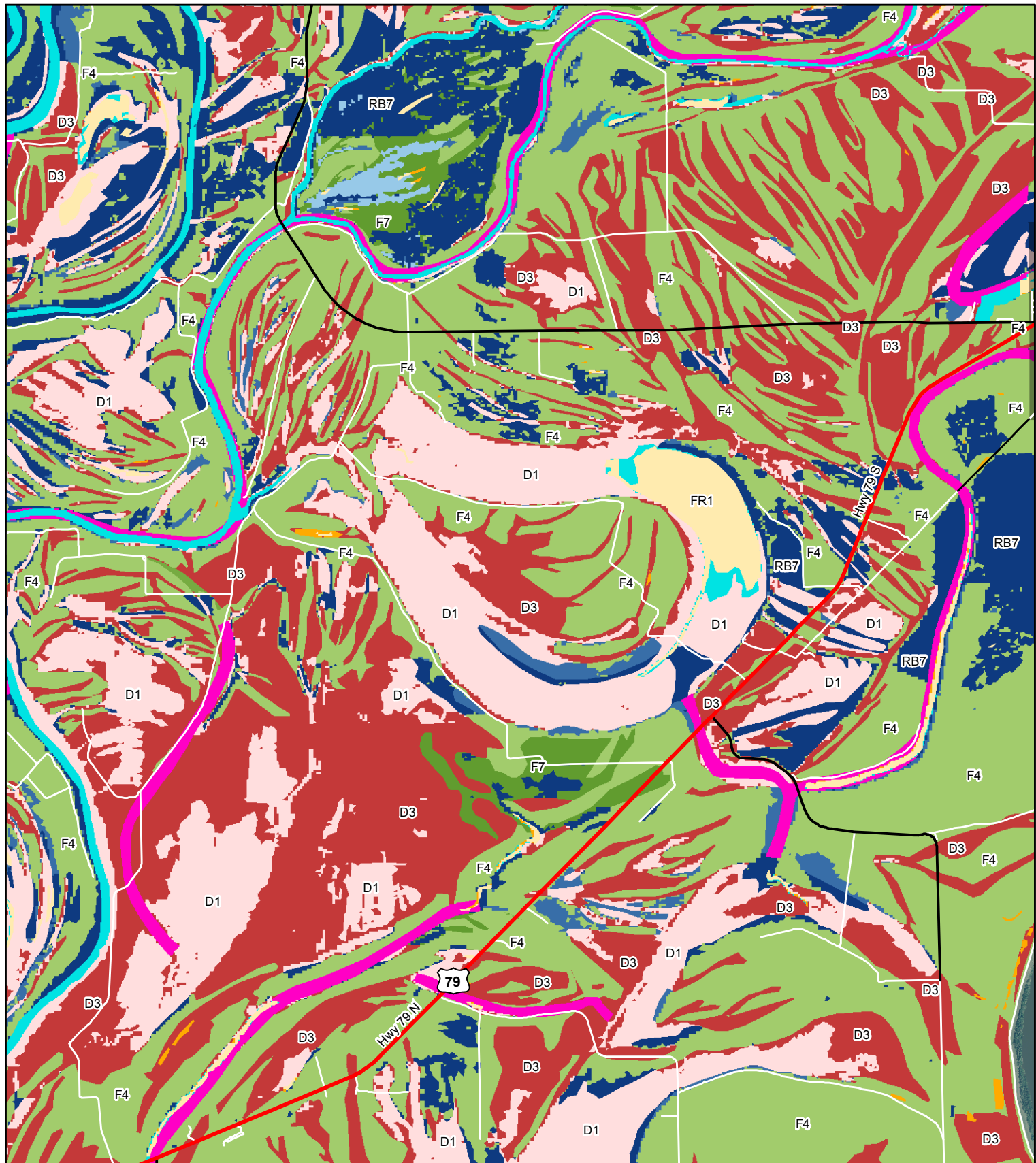Datum: North American 1983

US 79

D3 F4 D1 F4 F4 F4 D3

D3 D3 F4 D1 D3

F4 D1 D3

D3 D1 F4

D1 F4 D3 D3

D3 F4 F6 D1 D3

D3 D1 D3

D3

F4 D1

RB5

RB5 F4

F4 D1

D1 D3

RB7

F7 F4 RB7 F4 D3

RB7 RB2 D1 D1

D1 D3

RB2

F4

D1

F4 D1

RB5 D1 D1 D1

| 0 | 0.5 | 1 | 2 | 3 | 4 |
Miles

N13
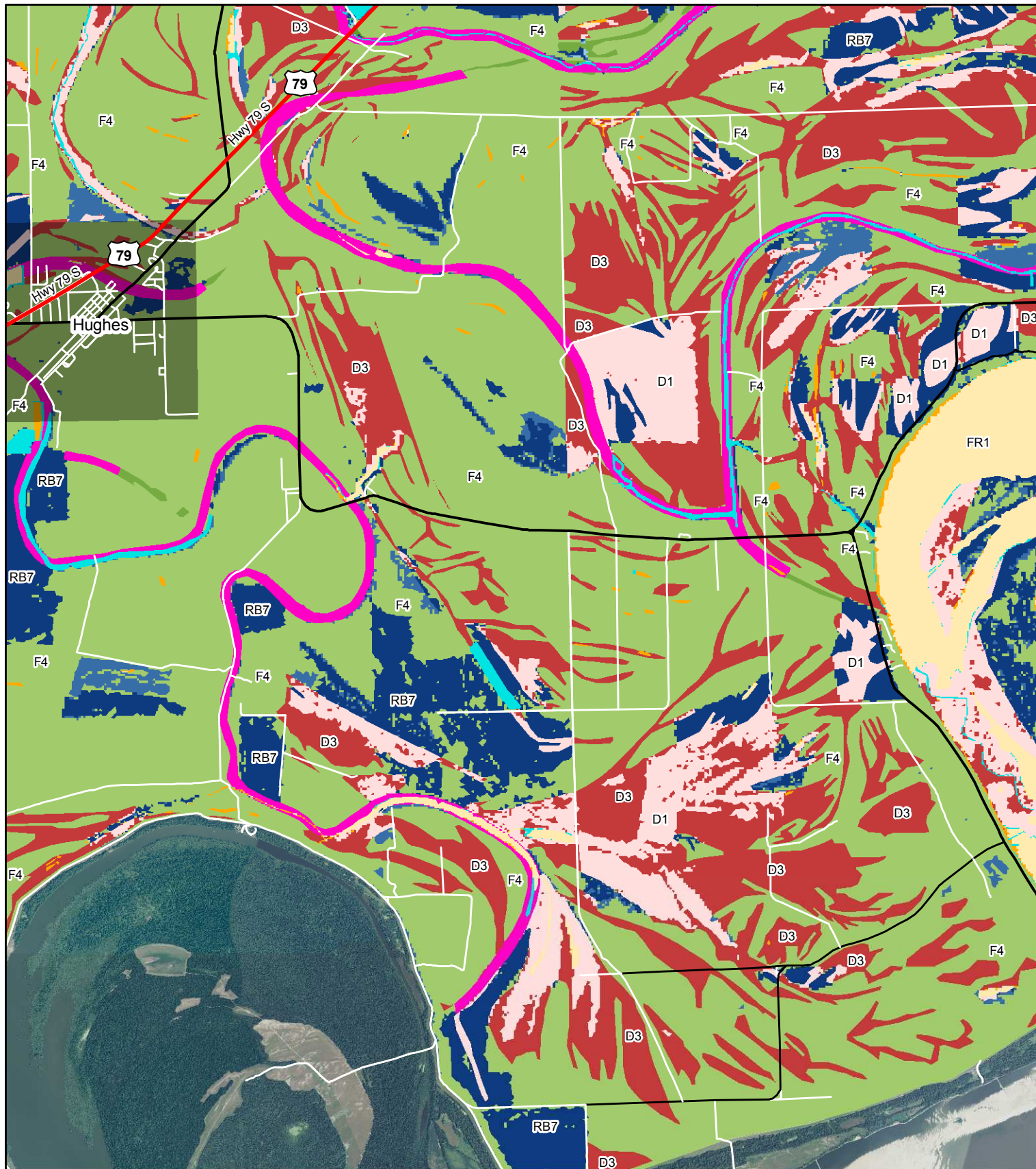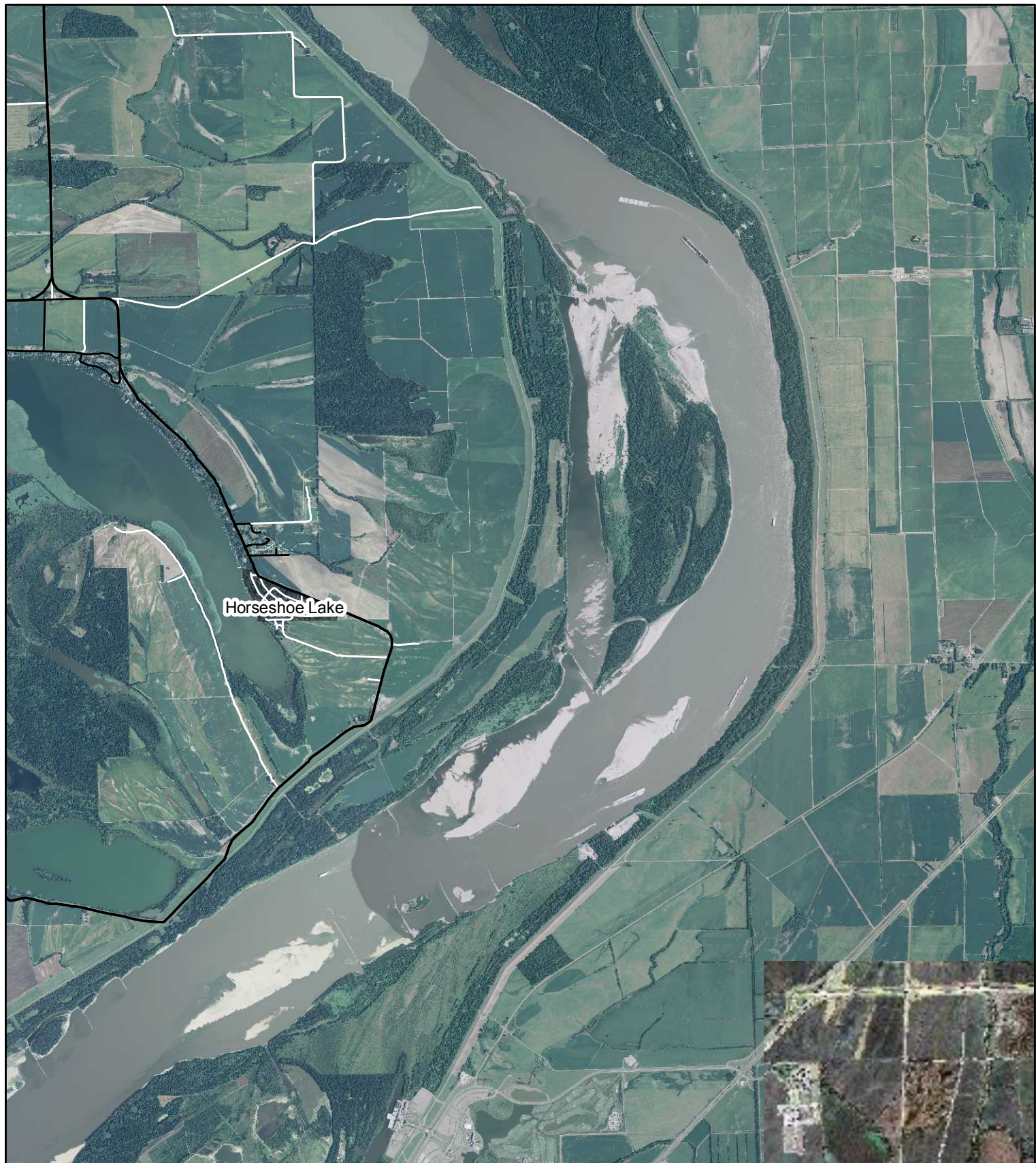
Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

0   0.5   1   2   3   4
                                                          Miles

N14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

D1   F4

0   0.5   1   2   3   4
Miles

N14

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

N

La Grange

Lexa

0   0.5   1   2   3   4
Miles

N

O12

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

RB5

RB5

RB7

RB7

RB5

RB7

RB7

RB5

La Grange

Lexa

0   0.5   1   2   3   4
Miles

O12

N

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

0 0.5 1 2 3 4
Miles

O13

Coordinate System: NAD 1983 UTM Zone 15N
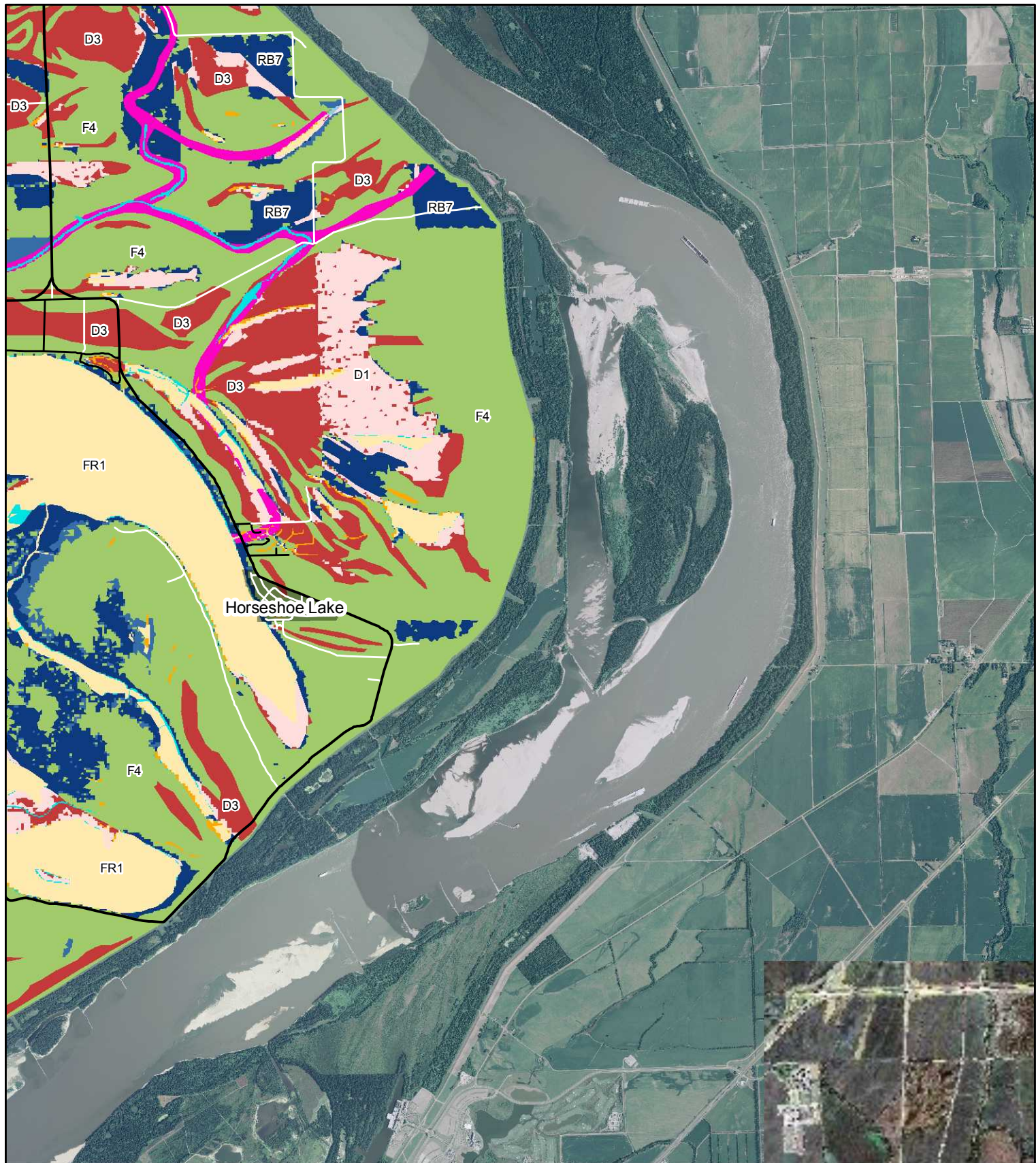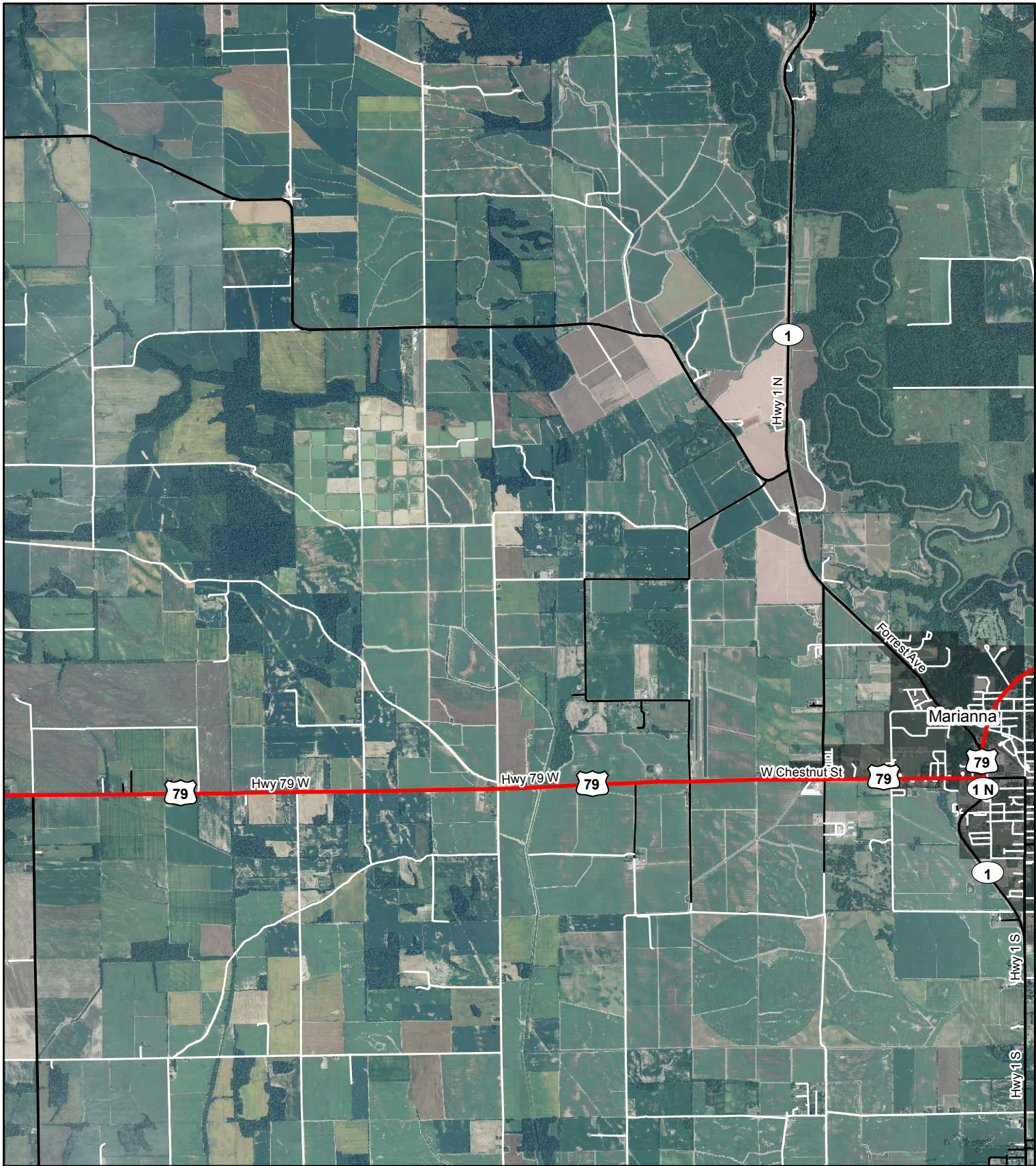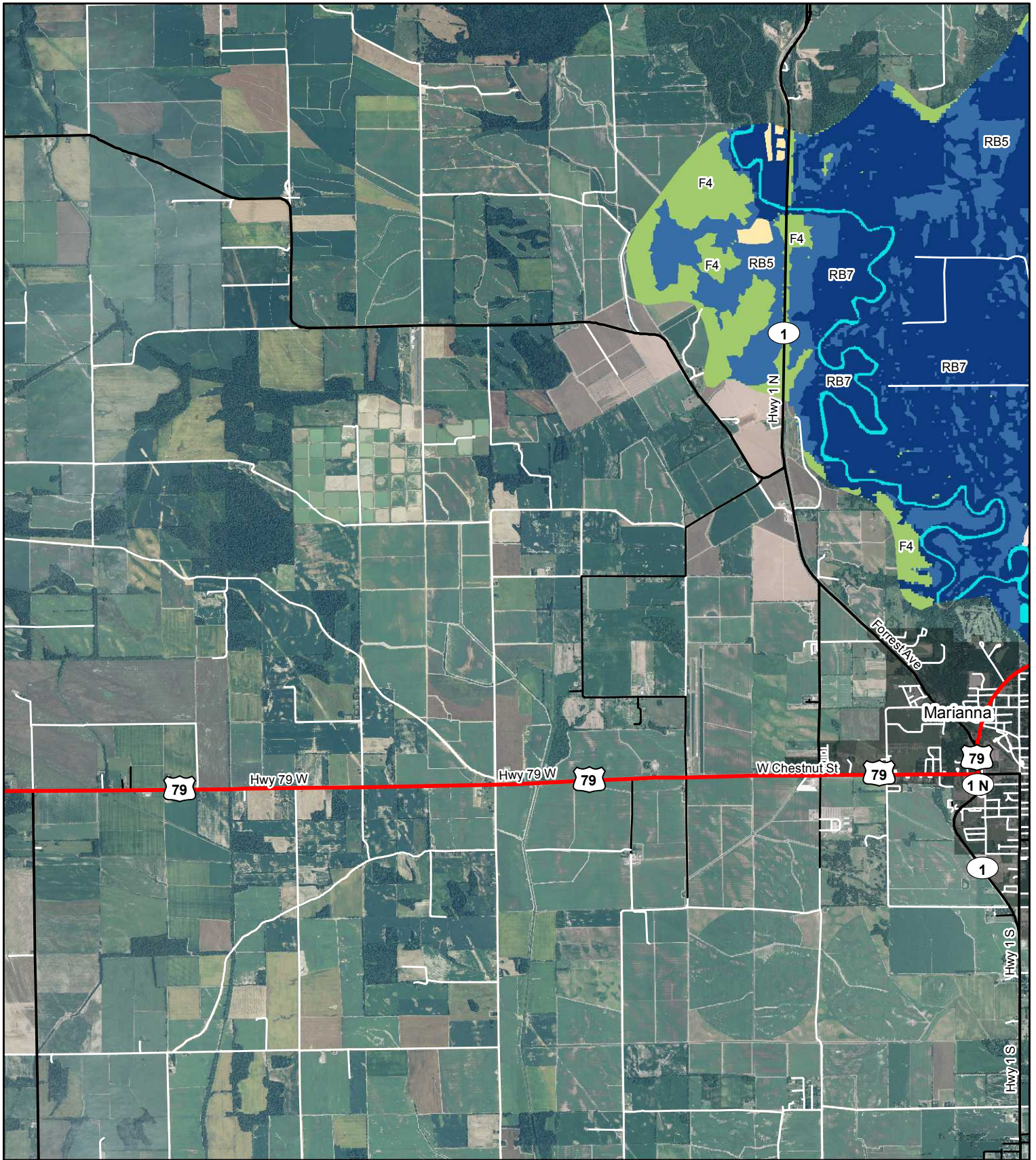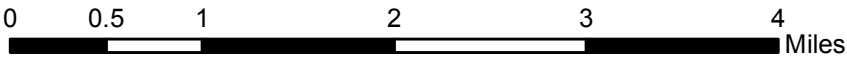Projection: Transverse Mercator
Datum: North American 1983

N
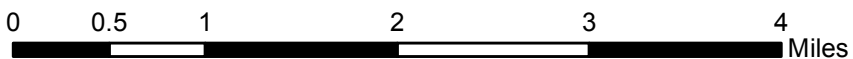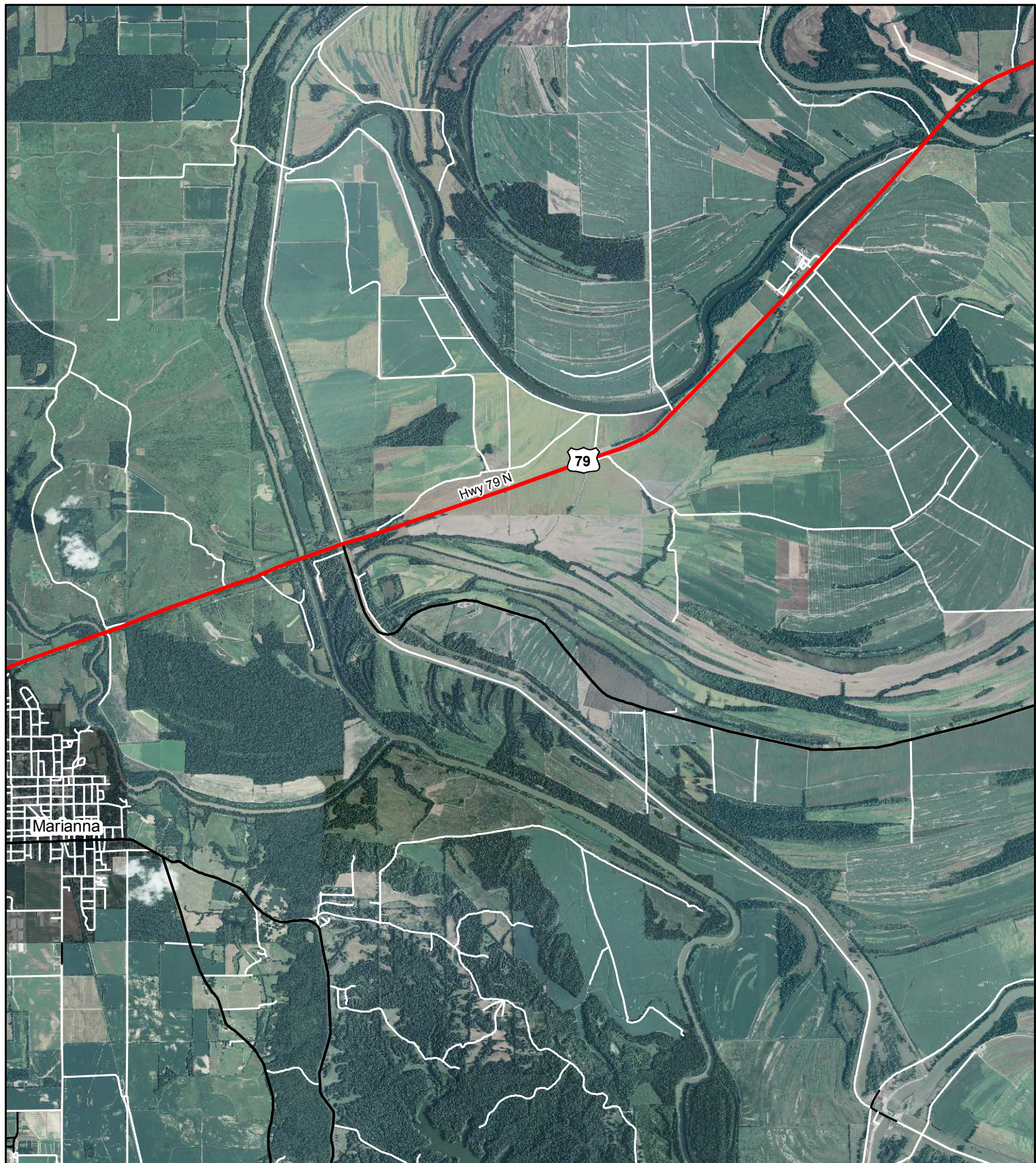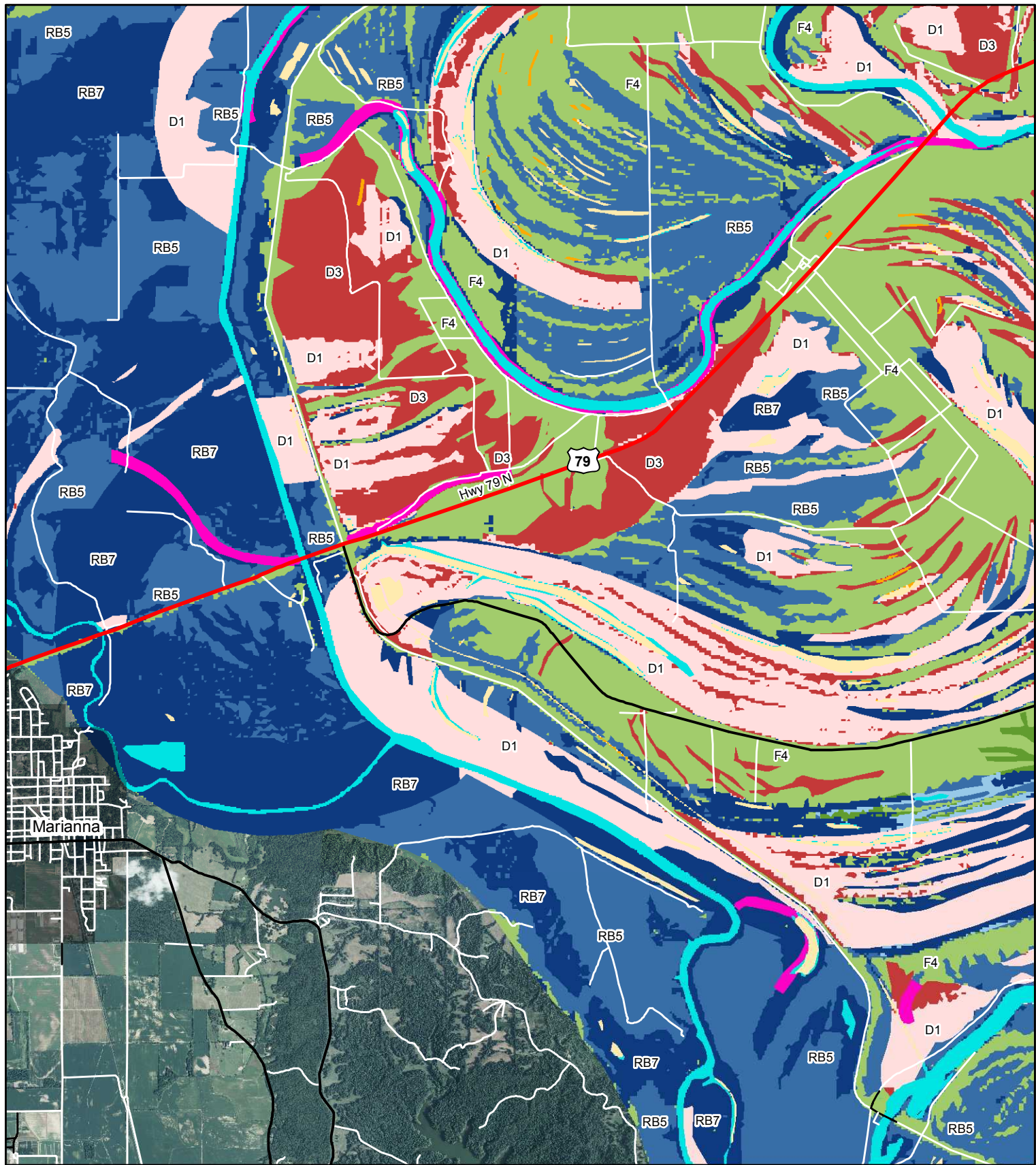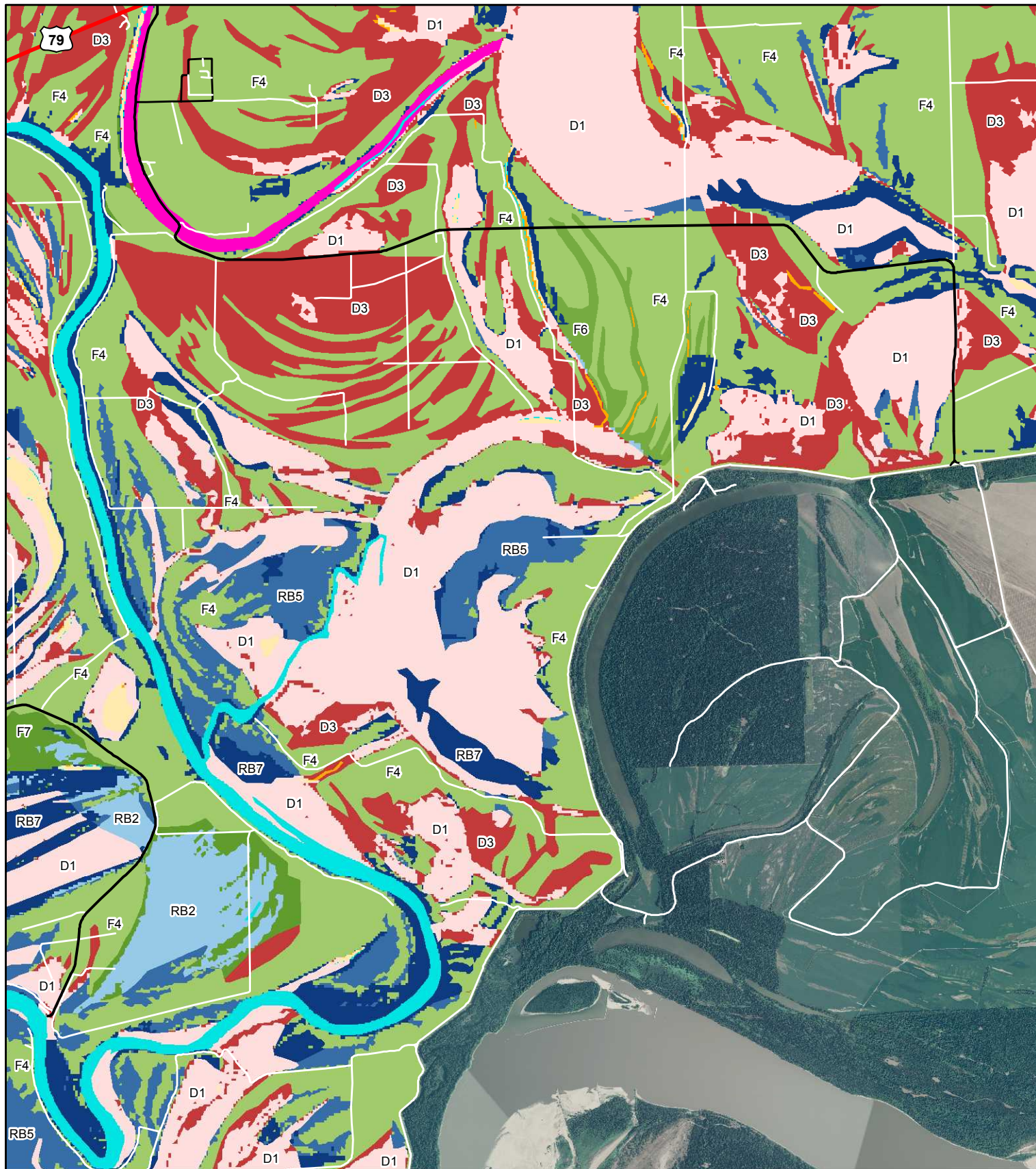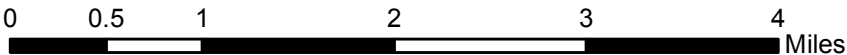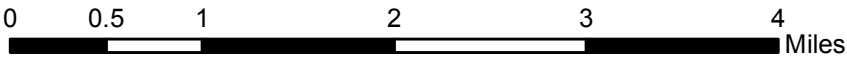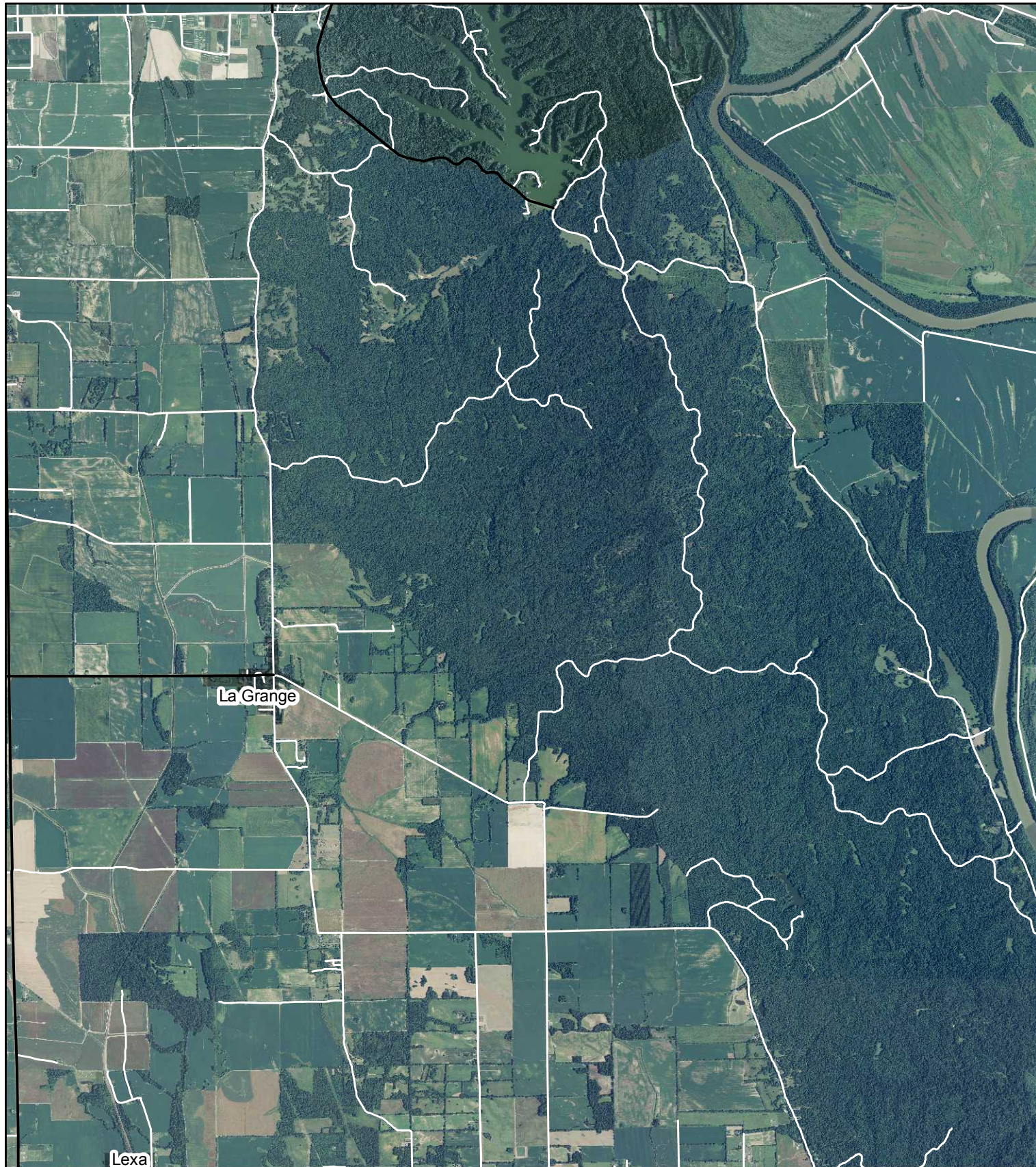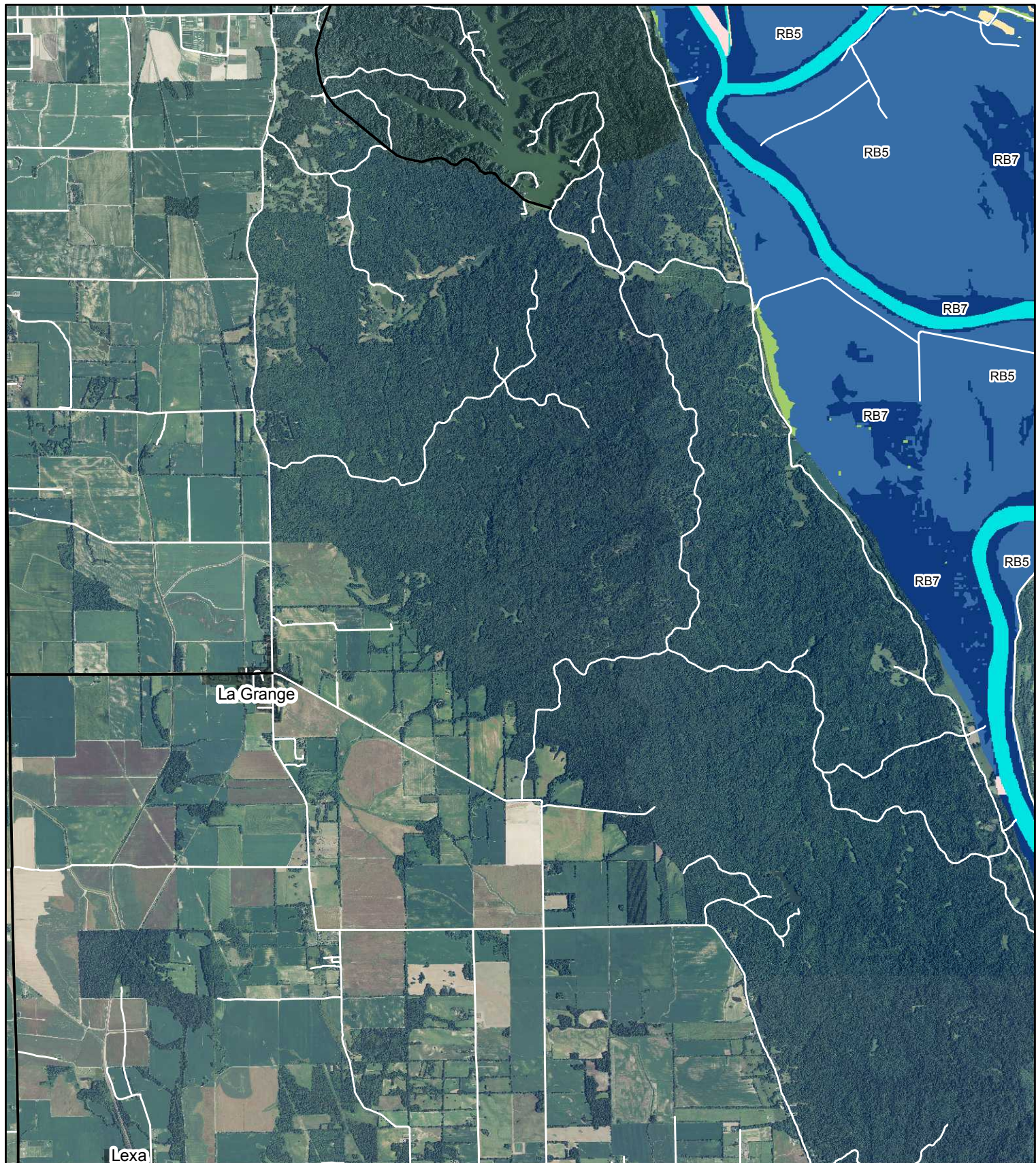
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Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

Appendix B: Potential Natural Vegetation Community Characteristics in the St. Francis Basin of Arkansas

This appendix describes the Potential Natural Vegetation of the St. Francis Basin of Arkansas. Because the purpose of the Field Atlas is to support ecosystem restoration design and planning, the focus is on the predominant long-term equilibrium community composition best adapted to persist on each site under the current hydrologic and climatic regime. This appendix is also intended to call attention to the presence and scale of topographic features, such as natural levee ridges and shallow vernal pools, which are essential elements of most of the community types. Where those features have been significantly altered, they must be restored to their approximate original extent prior to revegetation work in order to establish the community types described here and mapped in the Field Atlas.

The dominant and associated species listed are primarily trees, because most restoration projects in the region focus on reforestation, but understory species or other characteristics strongly associated with a particular community type are noted in some cases. All of the listed species do not necessarily occur together in any particular stand, but they may all be found on similar sites where mature, compositionally stable communities are present. No early successional communities are described, although seral patches exist in all of the community types, and in some settings, such as point bars within and along active channels, they may be extensive. Similarly, the community descriptions do not necessarily reflect the current vegetation found on many sites, which may have established under a previous hydrologic regime or been extensively manipulated.

The community type names reflect the Hydrogeomorphic (HGM) Classification and landscape setting. See the map legend for the corresponding dominance-type designations.

Note that, in much of the MAV, Pleistocene and Holocene deposits differ markedly in various respects, but in the St. Francis Basin the Pleistocene deposits often lie at approximately the same elevation as Holocene settings, and may be veneered with Holocene alluvium. Thus the community types identified as being on Holocene deposits often are also mapped on Pleistocene deposits, and vice versa.

HGM SUBCLASSES: RIVERINE BACKWATER		
COMMUNITY TYPE	**CHARACTERISTICS**	
	TYPICAL VEGETATION	**DESCRIPTION**
RB2 **Occasionally flooded, moderately drained lowlands**	Dominants: 　　Willow oak 　　Water oak 　　Sweetgum Vernal pools: 　　Nuttall oak 　　Green ash 　　Swamp privet	Relatively subdued ridge-and-swale landscapes predominantly occupied by willow oak and sweetgum. Occasional swales are dominated by Nuttall oak. Extensive areas within the floodways are in a mid-successional state characterized by pecan and American elm, and long-term restoration targets are uncertain due to unpredictable floodway operations.
RB3 **Occasionally flooded flats**	Dominants: 　　Willow oak 　　Nuttall oak Associated species: 　　Cherrybark oak 　　Green ash 　　Cow oak Vernal pools: 　　Overcup oak 　　Water elm	Willow oak flatwoods on the interfluves of outwash deposits with extensive vernal pools in the remnant channels. Species diversity is relatively low.
RB5 **Occasionally flooded Pleistocene deposits**	Dominants: 　　Willow oak 　　Delta post oak 　　Water oak Associates: 　　Cherrybark oak 　　Green ash 　　American elm 　　Sweetgum	Common on interfluve areas of Pleistocene outwash deposits as well as some more recent sediments, particularly those of smaller streams. Where this type occurs within the modern floodways, it is in a mid-successional state characterized by pecan and American elm, and long-term restoration targets are uncertain due to unpredictable floodway operations.
RB6 **Frequently flooded Pleistocene deposits**	Dominants: 　　Nuttall oak 　　Overcup oak 　　Green ash 　　Drummond red maple Associates: 　　Water oak 　　Willow oak 　　American elm 　　Sweetgum Relict in-channel bars (buried sand deposits):	Relict braided channels within the Late Pleistocene outwash (valley train) deposits. Relict channels tend to stay wetter and have more connection to the water table than the adjacent interfluves. In places, channel substrates include thick lenses of sand (former in-channel bars) where small stands of river-front species may occur. Where this type occurs within the floodways, composition can be highly variable due to water management history.

COMMUNITY TYPE	TYPICAL VEGETATION	DESCRIPTION
	Sycamore Swamp cottonwood River birch	

RB7
 	
Frequently flooded lowlands
	Dominants:
	    Overcup oak
	    Bitter pecan
	
	Associates on wetter sites:
	    Baldcypress
	    Water locust
	
	Associates on drier sites:
	    Nuttall oak
	    Green ash
	    Sweetgum
	    Willow oak
		This community type occurs on a wide variety of geomorphic settings and soil types where forest composition is strongly controlled by extended periods of backwater flooding in most years. The characteristic community is dominated by overcup oak, bitter pecan, and a limited group of associated canopy and understory species. Vines and ground cover species are less abundant and diverse than on less flooded sites. Dominance may shift to baldcypress and water tupelo in sumps and along minor interior drainageways. A more diverse species composition may develop on the margins of this type or on somewhat higher sites within it. Within floodways, earlier successional stages dominated by box elder, cottonwood, and sycamore are common and their restoration potential is complicated by the unusual flooding patterns.

RB9
 	
Post Oak flatwoods (wet saline phase)
	Dominant species:
	    Delta post oak
	    Willow oak
	
	Associated species:
	    Green ash
	    Shagbark hickory
		Saline soils on older, flat Pleistocene outwash terraces support a community of few species where Delta post oak is characteristically dominant.

HGM SUBCLASSES: RIVERINE OVERBANK		
	CHARACTERISTICS	
COMMUNITY TYPE	**TYPICAL VEGETATION**	**DESCRIPTION**

RO2
 	
River swamps in underfit channels
	Channel bottom zone:
	
	Dominants:
	    Baldcypress
	    Buttonbush
	
	Lower bank or narrow terrace adjacent to stream:
	
	Dominants:
	    Overcup oak
	    Black willow
	    Bitter pecan
	    Box elder
	    Sycamore
	
	Associates:
	    Water elm
	    Swamp privet
		"River swamps" of slow-moving streams that have occupied abandoned courses of larger rivers. Typically a swamp forest of baldcypress dominates the zone occupied by the modern stream at normal flows. The adjacent narrow floodplain and terraces and the former channel sideslopes support a series of forest species reflecting flood frequency, from overcup oak adjacent to the cypress community through natural levee species such as pecan along the channel rim. A wide variety of other species may occupy the intervening zones. A standard buffer along the center lines of the abandoned courses as mapped on 1:24,000 quad sheets was used to delimit this type; therefore, the boundaries are less precise than other mapped features.

COMMUNITY TYPE	TYPICAL VEGETATION	DESCRIPTION
	Leadplant Side slopes of abandoned channel: Mixed hardwoods and riverfront species	

RO4
Outwash channels in Late Pleistocene deposits and floodways
	Dominant species:
	    Nuttall oak
	    Red maple
	    Green ash
	    American elm
	    Sugarberry
	    Cherrybark oak
	
	Associated species:
	    Sycamore
	    Cottonwood
	    River birch
	    Swamp cottonwood
	
	Dominants on wettest sites:
	    Bald cypress
	    Overcup oak
	    Bitter pecan
	
	Dominants on drier sites:
	    Water oak
	    Sweetgum
	    Willow oak
		A diverse and variable type associated with the most recent outwash channels with sandy soils and high water tables as well as floodways with periodic high-energy flows. The resulting communities are often of a wetter character than flood frequencies alone might suggest, and many maintain a high component of species more typical of riverfront and disturbed sites, though these species usually are not dominant. Some valley train pond depressions may be included in this type but are not separable based on soils and must be recognized in the field based on deep ponding that extends through much of the growing season.

HGM SUBCLASS: FLAT		
	CHARACTERISTICS	
COMMUNITY TYPE	TYPICAL VEGETATION	DESCRIPTION

F2
Well-drained recent alluvium in lowlands
	Dominants:
	    Sycamore
	    Cottonwood
	    Pecan
	    Cow oak
	
	Associates:
	    Sugarberry
	    Sweetgum
	    Water oak
	
	Characteristic understory species:
	    Paw-paw
	    Cane
		Diverse communities on well-drained sites on point bars and where natural levee veneers cover backswamp deposits. Vernal pools occur where poorly drained soils underlie large swales.

	Vernal pools: Nuttall oak	

F4
 	
Moderately drained lowlands
	Dominants:
	    Sugarberry
	    Green ash
	    American elm
	    Sweetgum
	
	Associates:
	    Water oak
	    Willow oak
	    Persimmon
	    Cherrybark oak
	
	Vernal Pools:
	    Overcup oak
	    Bitter pecan
		Primarily on gently undulating, moderately drained point bars and veneered backswamps of various ages and origins. However, this type is widely distributed in the St. Francis Basin, including some Pleistocene sites. The characteristic community is sugarberry-elm-ash, but subtle site variations favor water oak on better drained ridges and Nuttall oak or willow oak on true topographic flats. Overcup oak usually dominates in swales.

F6
 	
Poorly drained lowlands
	Dominants:
	    Willow oak
	    Nuttall oak
	    Sweetgum
	
	Associates:
	    Cherrybark oak
	    Sugarberry
	    Shagbark hickory
	    American elm
	
	Characteristic understory species:
	    Green hawthorn
	    Winged elm
	
	Vernal pools:
	    Overcup oak
	    Green ash
		Poorly drained flats of various origins with large shallow vernal pools. Dominated by Nuttall and willow oaks. Better-drained sites within this type may shift dominance to cherrybark oak.

F7
 	
Poorly drained undulating topography on Pleistocene outwash terraces
	Dominant species on interfluves:
	    Water oak
	    Cow oak
	    Cherrybark oak
	    Pecan
	    Sugarberry
	
	Dominant species in channels:
	    Nuttall oak
	    Sugarberry
	    Willow oak
	    Sweetgum
	    American elm
		Common diverse flats of the younger Late Wisconsin outwash terraces and some Holocene deposits. Higher interfluves are bisected by lower remnant outwash channels, with species dominance shifting accordingly. Shallow, linear vernal pools are present in some channels, and where sandy soils predominate, riverfront species are common associates.

	Associated species: Cottonwood Sycamore	
F12 **Alkali post oak flats**	Dominant species: Post oak Vernal pools: Willow oak	This type is restricted to high-sodium soils of the Early Wisconsin Terrace. Post oaks strongly dominate and trees are often stunted due to the soil conditions. Vernal pools are small and shallow but are important in maintaining wetland conditions and adding species and site diversity.
F13 **Hardwood flats, Early Wisconsin Valley Train and Deweyville Terraces (wet phase)**	Dominant species: Nuttall oak Willow oak Water oak Red maple Associated species: Sugarberry Green ash Sweetgum River birch Vernal pools: Overcup oak	Extensive wet flats of various Wisconsin Terraces and in floodways. Composition in these forests is similar to the vernal pools of the "dry phase" hardwood flats on the same geomorphic surfaces. Vernal pools are not common, but may be large.
F16 **Willow oak flatwoods** **(wet phase)**	Dominant species: Willow oak Associated species: Green ash American elm Water oak Vernal pools: Overcup oak	Wet flats of the Early Wisconsin terraces. Broad shallow vernal pools are common, and essential to restoration of wetland hydrology on these sites.
F17 **Willow oak flatwoods** **(dry phase)**	Dominant species: Delta post oak Cherrybark oak Associated species: White oak Shagbark hickory Sweetgum Blackgum Vernal pools: Willow oak	Willow oak flats of the highest and oldest Early Wisconsin outwash terraces, where vernal pools are relatively small, shallow, and scattered.
F18 **Post oak flatwoods** **(wet phase)**	Dominant species: Delta post oak Associated species: Willow oak	Post oak flats of the Early Wisconsin outwash terraces strongly dominated by Delta post oak with willow oak as an associate and dominating in the small, scattered vernal pools.

F19
Post oak flatwoods
(dry phase)
	Dominant species:
	    Delta post oak
	    Post oak
	Associated species:
	    Southern red oak
		Post oak flats of the highest and oldest Early Wisconsin outwash terraces, where vernal pools are relatively small, shallow, and scattered.

HGM SUBCLASSES: CONNECTED AND UNCONNECTED DEPRESSION		
	CHARACTERISTICS	
COMMUNITY TYPE	**TYPICAL VEGETATION**	**DESCRIPTION**

D1
D3
Stream-connected and unconnected depressions in abandoned channels
	Dominants:
	    Baldcypress
	    Water tupelo
	    Overcup oak
	    Bitter pecan
	
	Understory and associated species:
	    Willow oak
	    Nuttall oak
	    Waterlocust
	    Swamp privet
	    Buttonbush
	    Persimmon
		Topographic depressions with very poorly drained soils in former stream channels and large swales, as well as some outwash channels. Connected depressions are connected to downstream systems by a perennial stream channel or are within the 5-year floodplain. Unconnected depressions meet neither of these criteria. Species composition is restricted to the most water-tolerant plants, which distinguishes true depressions from vernal pools. Vines and ground cover species are uncommon. Within much of the Big Lake area, this type is the natural setting but the area is currently managed similar to a riverine backwater site.

D4
Unconnected depressions on Pleistocene outwash terraces
	Dominants:
	    Baldcypress
	    Water tupelo
	    Overcup oak
	
	Understory and associated species:
	    Swamp privet
	    Swamp cottonwood
	    Nuttall oak
	    Drummond's red maple
	    Sycamore
		Depressions ("Valley Train Ponds") in remnant braided channels of the Pleistocene outwash (valley train) terraces. These features are relatively linear, and are largest and deepest on the younger (lower) terraces, where baldcypress is the most common dominant.

HGM SUBCLASSES: CONNECTED AND UNCONNECTED FRINGE		
	CHARACTERISTICS	
COMMUNITY TYPE	**TYPICAL VEGETATION**	**DESCRIPTION**

FR1
FR2
Stream-connected and unconnected lake and pond fringe wetlands
	Common dominants in systems with natural fluctuation patterns:
	    Baldcypress
	    Water tupelo
	    Buttonbush
	    Numerous herbaceous species
	
	Common dominants in systems with highly modified fluctuation patterns:
		Wetlands within permanent lakes and ponds, including borrow pits, but not aquaculture ponds. Natural systems typically support baldcypress and tupelo forests within the fluctuation zone and in the immediate lakefront zone where water tables remain near the surface. Buttonbush thickets may dominate in shallow, near-permanent water, and zones of emergent species are usually present, with erect rooted species in shallow water, floating-leaved species in deeper water, and submerged aquatics present throughout the open-water area. Where

	Black willow Buttonbush American lotus	water levels are manipulated, these patterns are usually altered in various ways. Because water depths and fluctuation patterns are unknown, the entire water body is mapped as fringe wetland. Connected fringe wetlands are connected to downstream aquatic systems by a perennial stream channel or are within the 5-year floodplain. Unconnected fringe wetlands meet neither of these criteria.
HGM SUBCLASS: UPLAND		
	CHARACTERISTICS	
COMMUNITY TYPE	**TYPICAL VEGETATION**	**DESCRIPTION**

U2
 	
Upland forests of Pleistocene outwash terraces and alluvial fans
	Dominant species:
	    Southern red oak
	    White oak
	    Post oak
	Associated species:
	    Water oak
	    Shagbark hickory
	    Black oak
	    Shumard oak
		Upland forests of the Pleistocene terraces and alluvial fans. Species composition can vary widely depending on local soils and drainage conditions.

U4
Pleistocene dunefields and barrens
	Dominant species:
	    Blackjack oak
	    Southern red oak
	    Post oak
	    Black oak
	    Shagbark hickory
	Associated species:
	    White oak
	    Sumac
	    Prairie grasses
		Sandy barrens of the Pleistocene terraces.

REPORT DOCUMENTATION PAGE	Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE *(DD-MM-YYYY)* September 2012	2. REPORT TYPE Final report	3. DATES COVERED *(From - To)*

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Potential Natural Vegetation of the Mississippi Alluvial Valley: St. Francis Basin, Arkansas, Field Atlas	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)	5d. PROJECT NUMBER
Charles Klimas, Thomas Foti, Jody Pagan, and Malcolm Williamson	5e. TASK NUMBER
	5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)	8. PERFORMING ORGANIZATION REPORT NUMBER
Environmental Laboratory U.S. Army Engineer Research and Development Center 3909 Halls Ferry Road, Vicksburg, MS 39180; Arkansas Natural Heritage Commission 323 Center Street, Little Rock, AR 72201; 5-Oaks Wildlife Services, L.L.C. 620 East 22nd St. Suite 206, Stuttgart, AR 72160; Center for Advanced Spatial Technologies 1 University of Arkansas, Fayetteville, AR 72701	ERDC/EL TR-12-23

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
U.S. Army Corps of Engineers Washington, DC 20314-1000	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

September 2012 version revised July 2013.

This report replaces a previous version dated September 2012, which contained a significant error. All copies of that previous version should be discarded, and the corresponding GIS files deleted. Replacement GIS files and a pdf of this revised report are available at http://el.erdc.usace.army.mil/emrrp/analyt.html .

14. ABSTRACT
Over the past three decades, extensive field studies of wetland plant communities have been conducted in the Mississippi Alluvial Valley. These field studies have been carried out for various purposes under the auspices of federal and state research programs or in conjunction with Corps of Engineers project planning efforts. In the process, a wetland site classification approach has evolved based on hydrology, soils, and geomorphic setting. The research data and classification system have been recently used for a new purpose: to create a set of Potential Natural Vegetation (PNV) maps covering more than 26,000 square miles within the region. The purpose of PNV maps is to serve as blueprints for restoration planning and prioritization. Due to the fact that the hydrology of the landscape has been permanently changed by major flood control projects, the PNV maps do not represent the distribution of the original, pre-settlement vegetation. Rather, they identify the natural communities that are appropriate to the modern altered site conditions. By using these maps, persons interested in restoring particular tracts of land can identify the plant communities appropriate to the conditions present. Conversely, individuals interested in restoring particular plant communities can identify parts of the landscape that can support each respective type. The PNV maps are available for use in a Geographic Information System, where a range of complex restoration scenarios (such as the development of wildlife travel corridors or refuge areas) can be explored efficiently, and alternative approaches can be compared to one another in terms of costs and ecological effectiveness. This report is one of six Field Atlases that present the same data in a downloadable, printable format at a scale of 1 in. = 1 mile.

15. SUBJECT TERMS	Potential Natural Vegetation (PNV) maps	Wetland site classification
Mississippi Alluvial Valley Plant communities	Restoration planning St. Francis Basin, Arkansas	

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified		167	19b. TELEPHONE NUMBER *(include area code)*

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. 239.18